

APPENDIX A-1

**MARCH 18, 1987 LETTER FROM MR. HARALD POLZ,
MERCEDES-BENZ OF NORTH AMERICA, INC. TO DR. LAWRENCE R. SMITH,
SOUTHWEST RESEARCH INSTITUTE**



MERCEDES-BENZ OF NORTH AMERICA, INC.

CABLE: MERCEBENZ MTL
OVERSEAS TELEX: 135404
DOMESTIC TELEX: 135404

March 18, 1987

ONE MERCEDES DRIVE
MONTVALE, NEW JERSEY 07645
PHONE: (201) 573-0600

Mr. Lawrence R. Smith
Southwest Research Institute
P.O. Drawer 28510
6220 Culebra Road
San Antonio, Texas 78284

Subject: SwRI / ARB Program - Trap-Equipped Light Duty Diesels

Dear Mr. Smith:

As discussed previously, we appreciate the opportunity to provide you with some comments by Daimler-Benz on your project "Characterization of Exhaust Emissions from Trap-Equipped Light Duty Diesels".

We know of course that the experience at SWRI with diesel engine concepts is quite extensive and none of this information might be too new for your purposes.

However, some definitions and/or concepts are critical and their clarification might still be useful.

1. Impact of a non-regenerating T.O.

In general, the two extreme cases

- ceramic substrate totally plugged, and
- ceramic substrate destroyed

can only be of academic interest. In the first case, the engine would no longer run, and in the second case emissions would no longer be influenced by the T.O. Any characterization of T.O. related emissions has to aim, therefore, for the conditions that still lead to at least some regeneration.

2. Normal T.O. condition

The T.O. is partially loaded due to automatic partial self-regeneration or basically not loaded after a full self-regeneration. This is the typical condition for most cases and can be verified as follows:

- automatic transmission, shift lever in position "P"
- test setting: high idle at 4000 rpm (zero load)
- test parameters: exhaust gas back pressure = pressure before T.O. (PbTO)
- test value: 1000 - PbTO - 2000 mbar.

The higher the T.O. loading, the sooner self-regeneration begins under driving conditions similar to the FTP 78 and/or HWFET. Under most of these circumstances, depending on engine load and climatic conditions, at least "equilibrium" is achieved, i.e. engine-out particulate mass equals oxidized particulate mass ("surface" reaction). Under highway driving conditions also at least an initial "in depth" reaction is achieved. If the time period for this reaction is long enough, full regeneration takes place. In such a case residual incombustible ashes might cause a permanent back pressure increase if compared to a new T.O.

Due to the wide variation of the back pressure under transient operating conditions it is very hard to define a typical operating condition for comparison purposes.

However, based on experience a typical loading can be achieved by using the following procedure:

- ETW = 4000 lbs., AHP = 10.6
- autom. transmission in "L"
- 30 mph, and monitoring of differential pressure across T.O. until the desired pressure is achieved.

Any pressure sensors should be connected to rising pressure lines, whereas the actual sensor connection should face downward. Otherwise, condensation, deposits and corrosion might give erroneous readings.

3. Simulation of T.O. operation

The functional unit "T.O. with following turbocharger" comprises a system which is thermodynamically very sensitive. The T.O. acts as a pressure and heat sink and influences, therefore, the dynamic behavior of the turbocharger substantially.

In addition, the functional system of the emission control measures is tuned to the prevailing pressure conditions.

In case the T.O. is replaced by a fixed orifice most all of the essential parameters are shifted, and the resulting test values become mostly unrepresentative if not meaningless. Only under steady-state conditions some exceptions might be appropriate.

The only alternative would be a pressure controlled variable orifice with simulation of the actual T.O. conditions as determined in prior testing. Even then, all thermodynamic effects caused by the T.O. heat sink would be neglected.

Daimler-Benz does not have such a control system available, rates such a method as highly unsatisfactory, and suggests, therefore, to substitute all tests involving the simulation of a T.O. with the following alternative procedure.

4. Initial Baseline w/o T.O.

The tests simulating operation w/o T.O. should be carried out with a vehicle representing the actual non-T.O. production concept.

This can be very easily realized by modifying the existing vehicle:

- replace T.O. with exhaust manifold 603 140 0303
(sent to SWRI by DBAG),
- replace ECU with part #006 545 7532,
- disconnect plug for air-bypass valve,

Naturally, this procedure has to be reversed if the T.O. system is to be used again.

Mr. Lawrence R. Smith
SWRI, San Antonio

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5. Testing with a failed T.O.

As outlined previously, the testing of non-regenerating T.O.s would be purely academic. However, it is possible to test trap oxidizers which developed some internal leaks and, therefore, have reduced filter efficiency.

Unfortunately, there is no method to determine with certainty whether a T.O. has such a fault without destroying the T.O. at the same time. Usually such faults are only detected, if at all, by monitoring test results over a long period of time.

If SWRI is interested in testing such a T.O., Daimler-Benz would initiate appropriate control measures on vehicles of its own fleet. In case such a suspect T.O. can be found, Daimler-Benz would ship it to SWRI. However, no guarantee can be given that such a T.O. would be detected in time for the program to be meaningful, or would survive transportation to SWRI.

We would appreciate your comments on this issue.

6. Atypical T.O. conditions

Under certain conditions it is possible that a T.O. does not regenerate and ends up being plugged. These extreme conditions are very rare and can usually be avoided:

- idling or similar condition over long periods
- extreme climatic conditions which might prevent reaching sufficient regeneration temperatures
- the use of unsuitable low quality diesel fuel.

Such a plugged condition can be verified and rectified by forcing regeneration using a combination of higher vehicle loads and speeds.

7. "Regeneration Cycle" and/or "Worst Case Regeneration"

Daimler-Benz does not have a defined regeneration cycle. All internal test programs made allowance to the facts discussed previously, i.e. self-regeneration depending on engine speed and load, and environmental conditions. Some parameters influencing regeneration are:

- exhaust gas temperature
- mass flow rate (back pressure)
- oxygen content of exhaust gas
- PM composition
- presence of catalysts and/or additives in diesel fuel
- mass and distribution of PM
- catalytic coating.

The following table lists some typical data for orientation purposes.

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SWRI, San Antonio

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ETW = 4000 lbs

AHP	Speed [mph]	Transmission	Exhaust Gas Temp before T.O. [°C]	Exhaust Gas Pressure before T.O. after T.O. [m bar]	
15			425	450	215
20	55	"D"	485	520	250
25*			510	635	360
30			510	730	460
15			370	1050	700
20	55	"S"	400	1450	890
25			435	1930	1075
30			480	1990	1100
full throttle*			720	1700	1300

* Reference data at 4000 rpm (high idle):

	Exhaust gas temp before T.O. [°C]	Exhaust gas Pressure before T.O. after T.O. [m bar]	
prior to 25 hp in "D" (T.O. Loaded)	350	1800	950
after 10 min with 25hp in "D" (T.O. partially regenerated)	350	1200	750
after 160 sec. with full load in "S" (T.O. regenerated)	350	1290	1170

Mr. Lawrence R. Smith
SWRI, San Antonio

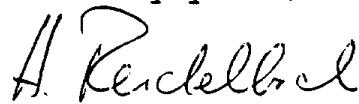
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8. General Comments

In order to maintain close control of the system during a test series it might be adviseable to define certain test parameters as control parameters and recheck these frequently at a defined operating condition, e.g. 4000 rpm (high idle).

Please feel free to call me if I can be of any further help.

Sincerely yours,


for Harald Polz, Manager
Emission Control

HP/jl

APPENDIX A-2

VOLKSWAGEN JETTA

SHIFT POINTS

XEROX TELECOPIER 295 : 8- 6-87; 2:43 PM; éé Fé 0-313 3626773 →
AUG 06 '87 15:58 VWOA VEH. REGULATIONS 313 3626773

912395 : # 3
P.3

3 3112-26600140=VWOAAA /2627-53619761=VWW /85-07-09-14:30/022-001
Shiftpoints according to A/C 72 A IV.A.2.

Cycle	Speed mph	Time sec.	Gear	Cycle	Speed mph	Time sec.	Gear
1	15.3	25.4	1-2	10	15.3	733.7	1-2
	22.7	47.0	2-3		26.7	741.3	2-3
	15.8	54.5	3-2		15.0	757.9	D
	24.6	61.0	2-3				
	30.4	88.0	3-4	11	15.3	770.8	1-2
	15.0	120.1	D		26.7	779.2	2-3
					33.0	805.0	3-4
2	15.3	167.6	1-2		19.2	840.0	4-2
	25.1	175.0	2-3		26.6	851.0	2-3
	17.2	187.0	3-2		15.0	951.6	D
	35.0	195.6	2-3				
	40.0	198.6	3-4	12	15.3	964.0	1-2
	47.0	204.3	4-5		26.7	972.3	2-3
	20.0	323.1	D		15.0	1017.8	D
3	15.3	351.4	1-2	13	15.3	1057.5	1-2
	26.7	357.1	2-3		26.7	1066.7	2-3
	34.5	365.0	3-4		15.0	1081.0	D
	15.0	391.8	D				
4	15.3	406.8	1-2	14	15.3	1109.5	1-2
	26.7	411.6	2-3		21.0	1113.0	2-3
	15.0	424.0	D		15.0	1147.5	D
5	15.3	451.6	1-2	15	15.3	1173.0	1-2
	26.7	455.2	2-3		15.0	1181.5	D
	34.8	461.0	3-4	16	15.3	1209.9	1-2
	15.0	499.5	D		21.0	1214.0	2-3
					15.0	1236.2	D
6	15.3	519.7	1-2				
	24.5	528.0	2-3	17	15.3	1270.4	1-2
	15.0	547.5	D		23.6	1277.0	2-3
					15.0	1307.9	D
7	15.3	573.5	1-2				
	21.0	597.0	2-3	18	15.3	1343.1	1-2
	22.7	606.0	3-2		21.9	1349.0	2-3
	15.0	615.4	D		15.0	1361.3	D
8	15.3	652.0	1-2				
	25.3	659.0	2-3				
	15.0	673.7	D				
9	15.3	701.4	1-2				
	22.5	710.0	2-3				
	15.0	720.0	D				

US 75 (FTP) Golf/Jetta Diesel M5 MY 1986

XEROX TELECOPIER 295 : 8-6-87; 2:43 PM; éé FÉTU 313 3626773 →
AUG 06 '87 15:59 VWDAA VEH.REGULATIONS 313 3626773

912395 : # 4

P.4

β 3112-26600140=VWDAAA /2627-53619761=VWW
Shiftpoints according to A/C 72 A IV.A.2.

/85-07-09-14:30/022-002

Cycle	Speed mph	Time sec.	Gear

1	15.3	7.3	1-2
	26.7	12.7	2-3
	34.1	22.0	3-4
	43.5	57.0	4-5
	39.5	139.0	5-4
	43.7	149.0	4-5
	40.0	214.5	5-4
	43.1	220.0	4-5
	28.4	296.0	5-3
	40.0	303.8	3-4
	50.1	326.7	4-5
	46.2	616.0	5-4
	50.1	620.4	4-5
	46.8	640.0	5-4
	50.1	649.9	4-5
	20.0	752.8	D

2	15.3	787.3	1-2
	26.7	792.7	2-3
	34.1	802.0	3-4
	43.5	837.0	4-5
	39.5	919.0	5-4
	43.7	929.0	4-5
	40.0	994.5	5-4
	43.1	1000.0	4-5
	28.4	1076.0	5-3
	40.0	1083.8	3-4
	50.1	1106.7	4-5
	46.2	1396.0	5-4
	50.1	1400.4	4-5
	46.8	1420.0	5-4
	50.1	1429.9	4-5
	20.0	1532.8	D

HWFET(HDC) Golf/Jetta Diesel M5 MY 1986

APPENDIX A-3

**LETTER OF TRANSMITTAL WITH FAILED
INJECTORS FROM VOLKSWAGEN OF AMERICA, INC.**



VOLKSWAGEN OF AMERICA, INC.
888 W. Big Beaver
P.O. Box 3951
Troy, Michigan 48007-3951
Tel. (313) 362-6000
WU Telex — 230 628

18 December, 1987.

Mr. Lawrence Smith
Southwest Research Institute
6220 Culebra Road
San Antonio, Texas
78284

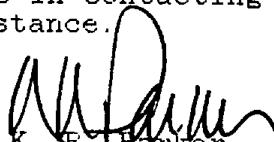
Dear Mr. Smith:

Per our conversation of 17 December, 1987, I am forwarding eight (8) diesel injectors which have been returned to our Parts Investigation group.

These injectors have been diagnosed by dealership personnel as being damaged or worn to a degree as to affect performance. Although the specific failure mode has not been noted individually, in general, one would expect three types of failures with this injector: 1) damaged or severely worn pintle, which would affect the spray pattern and individual cylinder combustion efficiency; 2) damaged or broken return spring, which would cause the injector to remain open thereby preventing or, at least, severely impairing engine starting, and; 3) lodgement of debris in the injector inlet, which would proportionately reduce the fuel charge delivered to that cylinder and/or affect the spray pattern as noted above.

It should be noted that any one of these injector failure modes is usually sufficiently disruptive to cause the vehicle owner to seek repair. Accordingly, we would regard one faulty injector as a "normal" failure. The insertion of multiple faulty injectors, in our opinion, would represent a catastrophic vehicular failure mode and would almost certainly prevent the vehicle from starting.

As Volkswagen remains firmly committed to your research efforts, please do not hesitate in contacting me if our company can be of further assistance.


K. R. Parker
VWoA Emissions

APPENDIX B
COMPUTER PRINTOUTS FOR THE REGULATED EMISSIONS,
MERCEDES

<u>Table B-</u>	<u>Test Date</u>	<u>Test No.</u>	<u>Trap</u>	<u>Fuel Aromatics</u>	<u>Test Condition</u>	<u>Test Cycle</u>
1	2/27/87	1-3	Original	Baseline	Baseline	FTP
2	2/25/87	1-1	Original	Baseline	Baseline	HFET
3	2/25/87	1-1	Original	Baseline	Baseline	NYCC
4	2/26/87	1-2	Original	Baseline	Baseline	FTP
5	2/26/87	1-2	Original	Baseline	Baseline	HFET
6	2/26/87	1-2	Original	Baseline	Baseline	NYCC
7	5/15/87	2-1	None	Baseline	Baseline	FTP
8	5/15/87	2-1	None	Baseline	Baseline	HFET
9	5/15/87	2-1	None	Baseline	Baseline	NYCC
10	5/18/87	2-2	None	Baseline	Baseline	FTP
11	5/18/87	2-2	None	Baseline	Baseline	HFET
12	5/18/87	2-2	None	Baseline	Baseline	NYCC
13	6/23/87	R-1	Original	Baseline	Regeneration	HFET
14	6/24/87	R-2	Original	Baseline	Regeneration	HFET
15	6/23/87	L-1	Original	Baseline	Loaded Trap	NYCC
16	8/21/87	2-3	None	Baseline	Baseline	FTP
17	8/25/87	4-1	None	Low	Baseline	FTP
18	8/25/87	4-2	None	Low	Baseline	FTP
19	2/25/88	11-1	Replacement	Baseline	Baseline	FTP
20	3/1/88	11-2	Replacement	Baseline	Baseline	FTP
21	3/3/88	13-1	Replacement	Low	Baseline	FTP
22	3/4/88	13-2	Replacement	Low	Baseline	FTP
23	3/9/88	R-1	Replacement	Low	Regeneration	HFET
24	3/11/88	R-2	Replacement	Low	Regeneration	HFET
25	3/15/88	R-3	Replacement	Low	Regeneration	HFET
26	3/17/88	11-3	Replacement	Baseline	Baseline	FTP
27	3/22/88	15-1	Replacement	Baseline	Worn Injectors	FTP
28	3/22/88	15-1	Replacement	Baseline	Worn Injectors	HFET
29	3/22/88	15-1	Replacement	Baseline	Worn Injectors	NYCC
30	3/29/88	11-4	Replacement	Baseline	Baseline	FTP
31	3/30/88	2-4	None	Baseline	Baseline	FTP
32	4/21/88	17-1	Replacement	Baseline	Retarded Timing	FTP
33	4/21/88	17-1	Replacement	Baseline	Retarded Timing	HFET
34	4/21/88	17-1	Replacement	Baseline	Retarded Timing	NYCC
35	4/22/88	17-2	Replacement	Baseline	Retarded Timing	FTP
36	4/22/88	17-2	Replacement	Baseline	Retarded Timing	HFET
37	4/22/88	17-2	Replacement	Baseline	Retarded Timing	NYCC
38	4/27/88	8-1	None	Baseline	Retarded Timing	FTP
39	4/27/88	8-1	None	Baseline	Retarded Timing	HFET
40	4/27/88	8-1	None	Baseline	Retarded Timing	NYCC
41	4/28/88	8-2	None	Baseline	Retarded Timing	FTP
42	4/28/88	8-2	None	Baseline	Retarded Timing	HFET
43	4/28/88	8-2	None	Baseline	Retarded Timing	NYCC
44	5/3/88	19-1	Replacement	Low	Retarded Timing	FTP
45	4/29/88	10-1	None	Low	Retarded Timing	FTP
46	5/6/88	11-5	Replacement	Baseline	Baseline	FTP
47	5/10/88	2-5	None	Baseline	Baseline	FTP

TABLE B-1. MERCEDES BASELINE WITH TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	1	RUN	3	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SD	DATE	2/27/87	ACTION ROAD LOAD	7.9 KW(10.6 HP)		
ENGINE 3.0 L[183. CID]	-6	BAG CART NO.	1 / CVS NO.	DIESEL	EM-619-F		
TRANSMISSION A3		DYNO NO.	2	ODOMETER	18353. KM(11404. MILES)		
BAROMETER	734.57 MM HG[28.92 IN HG]	DRY BULB TEMP.	25.0 DEG C[77.0 DEG F]				
RELATIVE HUMIDITY	53. PCT	ABS. HUMIDITY	10.8 G/KG	NOX HUMIDITY CORRECTION FACTOR	1.00		
BAG RESULTS							
BAG NUMBER		1	COLD TRANSIENT	2	STABILIZED	3	4
DESCRIPTION							
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 [50.0]	1270.0 [50.0]	1270.0 [50.0]	1270.0 [50.0]			
BLOWER INLET P MM. H2O(IN. H2O)	1244.6 [49.0]	1244.6 [49.0]	1244.6 [49.0]	1244.6 [49.0]			
BLOWER INLET TEMP. DEG. C(DEG. F)	43.3 [110.0]	41.1 [106.0]	43.3 [110.0]	42.2 [108.0]			
BLOWER REVOLUTIONS	4970.	8537.	4869.	8542.			
TOT FLOW STD. CU. METRES(SCF)	106.9 [3774.]	184.8 [6525.]	106.9 [3774.]	184.3 [6508.]			
THC SAMPLE METER/RANGE/PPM	15.7/ 2/ 16.	14.3/ 2/ 14.	13.3/12/ 13.	12.3/12/ 12.			
THC BCKGRD METER/RANGE/PPM	8.7/ 2/ 9.	9.8/ 2/ 10.	7.8/12/ 8.	8.5/12/ 9.			
CO SAMPLE METER/RANGE/PPM	67.2/13/ 65.	54.9/13/ 52.	68.7/13/ 66.	49.4/13/ 46.			
CO BCKGRD METER/RANGE/PPM	.6/13/ .1.	.7/13/ .1.	.4/13/ .0.	.3/13/ .0.			
CO2 SAMPLE METER/RANGE/PCT	60.1/ 3/ 1.0648	35.7/ 3/ .8019	54.5/ 3/ .9544	35.4/ 3/ .5965			
CO2 BCKGRD METER/RANGE/PCT	4.1/ 3/ .0668	3.8/ 3/ .0819	3.4/ 3/ .0554	3.5/ 3/ .0571			
NOX SAMPLE METER/RANGE/PPM	81.7/ 1/ 20.5	32.5/ 1/ 8.2	64.1/ 1/ 16.1	33.9/ 1/ 8.6			
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .1	.4/ 1/ .1	.4/ 1/ .1	.3/ 1/ .1			
DILUTION FACTOR	12.80	22.22	14.05	22.45			
THC CONCENTRATION PPM	8.	5.	6.	4.			
CO CONCENTRATION PPM	62.	50.	64.	45.			
CO2 CONCENTRATION PCT	1.0032	.5427	.8028	.5420			
NOX CONCENTRATION PPM	20.4	8.1	16.0	8.5			
FILTER WT. MG (EFFICIENCY, %)	.304 [77.]	.334 [84.]	.250 [68.]	.335 [85.]			
THC MASS GRAMS	.47	.53	.38	.45			
CO MASS GRAMS	7.70	10.71	7.93	9.59			
CO2 MASS GRAMS	1983.4	1836.1	1766.7	1828.8			
NOX MASS GRAMS	4.18	2.87	3.28	3.00			
PARTICULATE MASS GRAMS	.18	.19	.17	.19			
THC GRAMS/MI	.13	.13	.10	.12			
CO GRAMS/MI	2.12	2.74	2.19	2.48			
CO2 GRAMS/MI	540.8	470.2	489.0	472.5			
NOX GRAMS/MI	1.15	.74	.91	.77			
FUEL ECONOMY IN MPG	18.67	21.41	20.63	21.32			
RUN TIME	SECONDS	505.	868.	505.	868.		
MEASURED DISTANCE	MI	3.63	3.91	3.81	3.87		
SCF, DRY		.973	.976	.974	.976	.978	
DFC, WET (DRY)		.942(.926)		.946(.930)			
TOT VOL (SCM) / SAM BLR (SCM)		291.7/ 0.00		281.2/ 0.00			
MI (MEASURED)		7.54		7.48			
FUEL ECONOMY MPG		20.0		21.0			
COMPOSITE RESULTS				3-BAG	[4-BAG]		
TEST NUMBER	1			CARBON DIOXIDE	G/MI	490.0	[490.7]
BAROMETER	MM HG	734.6		FUEL ECONOMY	MPG	20.57	[20.55]
HUMIDITY	G/KG	10.8		HYDROCARBONS (THC)	G/MI	.13	[.12]
TEMPERATURE	DEG C	25.0		CARBON MONOXIDE	G/MI	2.46	[2.38]
				OXIDES OF NITROGEN	G/MI	.87	[.86]
				PARTICULATES	G/MI	.049	[.049]

TABLE B-2. MERCEDES BASELINE WITH TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -

PROJECT 08-1280-001

TEST NO. 1 RUN 1
VEHICLE MODEL 86 MERCEDES 300SDL
ENGINE 3.0 L(183. CID) -6
TRANSMISSION A3

VEHICLE NO.
DATE 2/25/87
BAG CART NO. 1
DYNO NO. 2
CVS NO. 17

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
DIESEL EM-619-F
ODOMETER 18289. KM(11364. MILES)

BAROMETER 740.66 MM HG(29.16 IN HG)
RELATIVE HUMIDITY 49. PCT
BAG RESULTS
TEST CYCLE

DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)
ABS. HUMIDITY 9.5 GM/KG

NOX HUMIDITY CORRECTION FACTOR .96

		TEST CYCLE
BLOWER DIF P MM.	H2O(IN. H2O)	1270.0 (50.0)
BLOWER INLET P MM.	H2O(IN. H2O)	1244.6 (49.0)
BLOWER INLET TEMP. DEG. C(DEG. F)		40.0 (104.0)
BLOWER REVOLUTIONS		7531.
TOT FLOW STD. CU. METRES(SCF)		165.2 (5835.)
THC SAMPLE METER/RANGE/PPM		17.2/12/ 17.
THC BCKGRD METER/RANGE/PPM		5.7/12/ 6.
CO SAMPLE METER/RANGE/PPM		56.7/12/ 121.
CO BCKGRD METER/RANGE/PPM		.2/12/ 0.
CO2 SAMPLE METER/RANGE/PCT		78.6/ 3/1.4397
CO2 BCKGRD METER/RANGE/PCT		3.9/ 3/ .0636
NOX SAMPLE METER/RANGE/PPM		78.1/ 1/ 19.6
NOX BCKGRD METER/RANGE/PPM		1.4/ 1/ .4
DILUTION FACTOR		9.30
THC CONCENTRATION PPM		12.
CO CONCENTRATION PPM		115.
CO2 CONCENTRATION PCT		1.3829
NOX CONCENTRATION PPM		19.3
FILTER WT. MG [EFFICIENCY, %]		.404 (81.)
THC MASS GRAMS		1.15
CO MASS GRAMS		22.17
CO2 MASS GRAMS		4183.8
NOX MASS GRAMS		5.86
PARTICULATE MASS GRAMS		.24
RUN TIME SECONDS		765.
DFC, WET (DRY)		.893 (.879)
SCF, WET (DRY)		1.000 (.971)
VOL (SCM)		165.2
SAM BLR (SCM)		0.00
MI (MEASURED)		10.23
TEST NUMBER,		1
BAROMETER, MM HG		740.7
HUMIDITY, G/KG		9.5
TEMPERATURE, DEG C		24.4
CARBON DIOXIDE, G/MI		409.2
FUEL ECONOMY, MPG		24.6
HYDROCARBONS, [THC] G/MI		.11
CARBON MONOXIDE, G/MI		2.17
OXIDES OF NITROGEN, G/MI		.57
PARTICULATES, G/MI		.023

TABLE B-3. MERCEDES BASELINE WITH TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -

PROJECT 08-1280-001

TEST NO. 1 RUN 1
VEHICLE MODEL 86 MERCEDES 300SDL
ENGINE 3.0 L(183. CID) -6
TRANSMISSION A3

VEHICLE NO.
DATE 2/25/87
BAG CART NO. 1
DYNO NO. 2
CVS NO. 17

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
DIESEL EM-619-F
ODOMETER 18305. KM(11374. MILES)

BAROMETER 740.66 MM HG(29.16 IN HG)
RELATIVE HUMIDITY 49. PCT
BAG RESULTS

DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)
ABS. HUMIDITY 9.5 GM/KG

NOX HUMIDITY CORRECTION FACTOR .96

TEST CYCLE

NYCC

BLOWER DIF P MM, H2O(IN. H2O)	1270.0 [50.0]
BLOWER INLET P MM, H2O(IN. H2O)	1244.6 [49.0]
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 [106.0]
BLOWER REVOLUTIONS	5902.
TOT FLOW STD. CU. METRES(SCF)	128.7 [4543.]
THC SAMPLE METER/RANGE/PPM	9.1/12/ 9.
THC BCKGRD METER/RANGE/PPM	6.1/12/ 6.
CO SAMPLE METER/RANGE/PPM	31.5/13/ 29.
CO BCKGRD METER/RANGE/PPM	.6/13/ 1.
CO2 SAMPLE METER/RANGE/PCT	54.0/11/ .4258
CO2 BCKGRD METER/RANGE/PCT	8.0/11/ .0477
NOX SAMPLE METER/RANGE/PPM	41.6/ 1/ 10.5
NOX BCKGRD METER/RANGE/PPM	1.4/ 1/ .4
DILUTION FACTOR	31.47
THC CONCENTRATION PPM	3.
CO CONCENTRATION PPM	28.
CO2 CONCENTRATION PCT	.3796
NOX CONCENTRATION PPM	10.1
FILTER WT. MG [EFFICIENCY, %]	.155 (60.)
THC MASS GRAMS	.24
CO MASS GRAMS	4.12
CO2 MASS GRAMS	894.3
NOX MASS GRAMS	2.40
PARTICULATE MASS GRAMS	.12
RUN TIME SECONDS	600.
DFC, WET [DRY]	.988 [.953]
SCF, WET [DRY]	1.000 [.980]
VOL (SCM)	128.7
SAM BLR (SCM)	0.00
MI [MEASURED]	1.17
TEST NUMBER,	1
BAROMETER, MM HG	740.7
HUMIDITY, G/KG	9.5
TEMPERATURE, DEG C	24.4
CARBON DIOXIDE, G/MI	763.7
FUEL ECONOMY, MPG	13.2
HYDROCARBONS, (THC) G/MI	.20
CARBON MONOXIDE, G/MI	3.52
OXIDES OF NITROGEN, G/MI	2.05
PARTICULATES, G/MI	.106

TABLE B-4. MERCEDES BASELINE WITH TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	1	RUN	2	VEHICLE NO.		TEST WEIGHT	1926. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL			DATE	2/26/87	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID)	-6			BAG CART NO.	1 / CVS NO. 17	DIESEL	EN-619-F
TRANSMISSION A3				DYNO NO.	2	Odometer	18306. KM(11375. MILES)
BAROMETER	738.38 MM HG(29.07 IN HG)			DRY BULB TEMP.	23.3 DEG C(74.0 DEG F)		
RELATIVE HUMIDITY	62. PCT			ABS. HUMIDITY	11.5 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.03
BAG RESULTS							
BAG NUMBER				1	2	3	4
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1270.0 [50.0]			1270.0 [50.0]		1270.0 [50.0]	
BLOWER INLET P MM. H2O(IN. H2O)	1244.6 [49.0]			1244.6 [49.0]		1244.6 [49.0]	
BLOWER INLET TEMP. DEG. C(DEG. F)	39.4 [103.0]			40.0 [104.0]		42.2 [108.0]	41.7 [107.0]
BLOWER REVOLUTIONS	4969.			8544.		4965.	8546.
TOT FLOW STD. CU. METRES(SCF)	108.8 [3842.]			186.8 [6594.]		107.8 [3807.]	185.9 [6563.]
THC SAMPLE METER/RANGE/PPM	14.0/12/ 14.			12.1/12/ 12.		14.8/12/ 15.	13.8/12/ 14.
THC BCKGRD METER/RANGE/PPM	5.9/12/ 8.			6.3/12/ 6.		6.7/12/ 7.	7.1/12/ 7.
CO SAMPLE METER/RANGE/PPM	68.0/13/ 66.			69.2/13/ 67.		78.5/13/ 77.	55.8/13/ 53.
CO BCKGRD METER/RANGE/PPM	1.0/13/ 1.			1.2/13/ 1.		.7/13/ 1.	.8/13/ 1.
CO2 SAMPLE METER/RANGE/PCT	96.2/11/ .9916			66.2/11/ .5622		91.9/11/ .9198	67.0/11/ .5718
CO2 BCKGRD METER/RANGE/PCT	8.5/11/ .0509			8.4/11/ .0502		8.3/11/ .0496	8.3/11/ .0496
NOX SAMPLE METER/RANGE/PPM	81.3/ 1/ 20.4			33.8/ 1/ 8.5		59.5/ 1/ 14.9	34.4/ 1/ 8.7
NOX BCKGRD METER/RANGE/PPM	1.0/ 1/ .3			.5/ 1/ .1		.8/ 1/ .2	.4/ 1/ .1
DILUTION FACTOR	13.53			23.72		14.56	23.38
THC CONCENTRATION PPM	8.			6.		9.	7.
CO CONCENTRATION PPM	62.			64.		74.	50.
CO2 CONCENTRATION PCT	.9445			.5141		.8736	.5243
NOX CONCENTRATION PPM	20.1			8.4		14.7	8.6
FILTER WT. MG (EFFICIENCY, %)	.213 [77.]			.317 [85.]		.312 [82.]	.322 [81.]
THC MASS GRAMS	.53			.66		.53	.73
CO MASS GRAMS	7.89			13.89		9.26	10.92
CO2 MASS GRAMS	1881.5			1757.8		1724.5	1784.3
NOX MASS GRAMS	4.30			3.08		3.12	3.13
PARTICULATE MASS GRAMS	.13			.18		.18	.20
THC GRAMS/MI	.15			.17		.15	.19
CO GRAMS/MI	2.18			3.58		2.57	2.81
CO2 GRAMS/MI	520.5			453.3		477.9	459.4
NOX GRAMS/MI	1.19			.79		.86	.81
FUEL ECONOMY IN MPG	19.38			22.13		21.07	21.89
RUN TIME	SECONDS			504.		504.	868.
MEASURED DISTANCE	MI			3.81		3.81	3.88
SCF, DRY				.971	.973	.975	.975
DFC, WET (DRY)				.946 [.927]		.948 [.929]	
TOT VOL (SCM) / SAM BLR (SCM)				295.6/ 0.00		293.7/ 0.00	
MI (MEASURED)				7.49		7.49	
FUEL ECONOMY MPG				20.7		21.5	
COMPOSITE RESULTS							
TEST NUMBER	1					3-BAG	[4-BAG]
BAROMETER	MM HG	738.4				474.0	[475.8]
HUMIDITY	G/KG	11.5				21.21	[21.15]
TEMPERATURE	DEG C	23.3				.16	[.16]
						3.01	[2.79]
						.90	[.90]
						.046	[.047]
CARBON DIOXIDE	G/MI						
FUEL ECONOMY	MPG						
HYDROCARBONS (THC)	G/MI						
CARBON MONOXIDE	G/MI						
OXIDES OF NITROGEN	G/MI						
PARTICULATES	G/MI						

TABLE B-5. MERCEDES BASELINE WITH TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	1	RUN	2	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL			DATE	2/26/87	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID)	-6			BAG CART NO.	1	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	18330. KM(11390. MILES)
CVS NO.	17						
BAROMETER	737.36 MM HG(29.03 IN HG)			DRY BULB TEMP.	31.1 DEG C(88.0 DEG F)	NOX HUMIDITY CORRECTION FACTOR	.94
RELATIVE HUMIDITY	30. PCT			ABS. HUMIDITY	8.9 GM/KG		
BAG RESULTS				HFET			
TEST CYCLE							
BLOWER DIF P MM. H2O(IN. H2O)				1270.0 [50.0]			
BLOWER INLET P MM. H2O(IN. H2O)				1244.6 [49.0]			
BLOWER INLET TEMP. DEG. C(DEG. F)				42.2 [108.0]			
BLOWER REVOLUTIONS				7528.			
TOT FLOW STD. CU. METRES(SCF)				163.2 [5762.]			
THC SAMPLE METER/RANGE/PPM				19.2/12/ 19.			
THC BCKGRD METER/RANGE/PPM				8.4/12/ 8.			
CO SAMPLE METER/RANGE/PPM				55.1/12/ 127.			
CO BCKGRD METER/RANGE/PPM				.1/12/ 0.			
CO2 SAMPLE METER/RANGE/PCT				78.3/ 3/1.4336			
CO2 BCKGRD METER/RANGE/PCT				3.7/ 3/ .0803			
NOX SAMPLE METER/RANGE/PPM				74.1/ 1/ 18.6			
NOX BCKGRD METER/RANGE/PPM				.4/ 1/ .1			
DILUTION FACTOR				9.34			
THC CONCENTRATION PPM				12.			
CO CONCENTRATION PPM				122.			
CO2 CONCENTRATION PCT				1.3797			
NOX CONCENTRATION PPM				18.5			
FILTER WT. MG (EFFICIENCY, %)				.459 [78.]			
THC MASS GRAMS				1.10			
CO MASS GRAMS				23.21			
CO2 MASS GRAMS				4122.2			
NOX MASS GRAMS				5.44			
PARTICULATE MASS GRAMS				.28			
RUN TIME	SECONDS			765.			
DFC, WET [DRY]				.893 [.884]			
SCF, WET [DRY]				1.000 [.977]			
VOL [SCM]				163.2			
SAM BLR [SCM]				0.00			
MI (MEASURED)				10.22			
TEST NUMBER,				1			
BAROMETER,	MM HG			737.4			
HUMIDITY,	G/KG			8.9			
TEMPERATURE,	DEG C			31.1			
CARBON DIOXIDE,	G/MI			403.4			
FUEL ECONOMY,	MPG			25.0			
HYDROCARBONS, (THC)	G/MI			.11			
CARBON MONOXIDE,	G/MI			2.27			
OXIDES OF NITROGEN,	G/MI			.53			
PARTICULATES,	G/MI			.027			

TABLE B-6. MERCEDES BASELINE WITH TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	1	RUN	2	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)	
VEHICLE MODEL	86 MERCEDES 300SDL			DATE	2/28/87	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)	
ENGINE 3.0 L(183, CID)	-6			BAG CART NO.	1	DIESEL	EM-619-F	
TRANSMISSION A3				DYNO NO.	2	ODOMETER	18348. KM(11401. MILES)	
BAROMETER	736.85 MM HG[29.01 IN HG]			CVS NO.	17			
RELATIVE HUMIDITY	48. PCT					DRY BULB TEMP.	27.2 DEG C(81.0 DEG F)	
BAG RESULTS						ABS. HUMIDITY	11.3 GM/KG	
TEST CYCLE							NOX HUMIDITY CORRECTION FACTOR	1.02
				NYCC				
BLOWER DIF P MM, H2O(IN, H2O)				1270.0 (50.0)				
BLOWER INLET P MM, H2O(IN, H2O)				1244.6 (49.0)				
BLOWER INLET TEMP, DEG. C(DEG. F)				44.4 (112.0)				
BLOWER REVOLUTIONS				5889.				
TOT FLOW STD. CU. METRES(SCF)				126.8 (4478.)				
THC SAMPLE METER/RANGE/PPM				11.8/12/ 12.				
THC BCKGRD METER/RANGE/PPM				8.9/12/ 9.				
CO SAMPLE METER/RANGE/PPM				36.6/13/ 34.				
CO BCKGRD METER/RANGE/PPM				.2/13/ 0.				
CO2 SAMPLE METER/RANGE/PCT				55.4/11/ .4406				
CO2 BCKGRD METER/RANGE/PCT				8.5/11/ .0509				
NOX SAMPLE METER/RANGE/PPM				41.0/ 1/ 10.3				
NOX BCKGRD METER/RANGE/PPM				.3/ 1/ .1				
DILUTION FACTOR				30.37				
THC CONCENTRATION PPM				3.				
CO CONCENTRATION PPM				33.				
CO2 CONCENTRATION PCT				.3914				
NOX CONCENTRATION PPM				10.2				
FILTER WT. MG (EFFICIENCY, %)				.172 (65.)				
THC MASS GRAMS				.23				
CO MASS GRAMS				4.82				
CO2 MASS GRAMS				908.8				
NOX MASS GRAMS				2.53				
PARTICULATE MASS GRAMS				.13				
RUN TIME	SECONDS			598.				
DFC, WET (DRY)				.967 (.952)				
SCF, WET (DRY)				1.000 (.980)				
VOL (SCM)				126.8				
SAM BLR (SCM)				0.00				
MI (MEASURED)				1.19				
TEST NUMBER,				1				
BAROMETER,	MM HG			736.9				
HUMIDITY,	G/KG			11.3				
TEMPERATURE,	DEG C			27.2				
CARBON DIOXIDE,	G/MI			766.1				
FUEL ECONOMY,	MPG			13.1				
HYDROCARBONS, (THC)	G/MI			.20				
CARBON MONOXIDE,	G/MI			4.06				
OXIDES OF NITROGEN,	G/MI			2.13				
PARTICULATES,	G/MI			.107				

TABLE B-7. MERCEDES BASELINE WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH FTP - VEHICLE EMISSIONS RESULTS - PROJECT 08-1280-001			
TEST NO.	RUN 1	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 5/15/87	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) -6		BAG CART NO. 1 / CVS NO. 17	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 18575. KM(11542. MILES)
BAROMETER 743.20 MM HG(29.26 IN HG)		DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)	NOX HUMIDITY CORRECTION FACTOR 1.04
RELATIVE HUMIDITY 51. PCT		ABS. HUMIDITY 11.9 GM/KG	
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM, H2O(IN. H2O)	1778.0 [70.0]	1778.0 [70.0]	1778.0 [70.0]
BLOWER INLET P MM, H2O(IN. H2O)	1778.0 [70.0]	1778.0 [70.0]	1778.0 [70.0]
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 [109.0]	43.3 [110.0]	42.2 [108.0]
BLOWER REVOLUTIONS	4990.	8485.	8485.
TOT FLOW STD. CU. METRES(SCF)	100.4 [3545.]	170.4 [6018.]	99.8 [3525.]
THC SAMPLE METER/RANGE/PPM	25.3/22/ 25.	18.4/22/ 18.	21.0/22/ 21.
THC BCKGRD METER/RANGE/PPM	8.6/22/ 9.	8.9/22/ 9.	9.2/22/ 9.
CO SAMPLE METER/RANGE/PPM	42.2/13/ 39.	30.3/13/ 28.	34.9/13/ 32.
CO BCKGRD METER/RANGE/PPM	.8/13/ 1.	.3/13/ 0.	.6/13/ 1.
CO2 SAMPLE METER/RANGE/PCT	57.5/ 3/1.0132	35.1/ 3/ .5911	50.7/ 3/ .8808
CO2 BCKGRD METER/RANGE/PCT	3.3/ 3/ .0538	3.2/ 3/ .0522	3.0/ 3/ .0489
NOX SAMPLE METER/RANGE/PPM	78.1/ 1/ 19.6	32.6/ 1/ 8.2	59.0/ 1/ 14.8
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0	.2/ 1/ .1	.4/ 1/ .1
DILUTION FACTOR	13.26	22.70	15.26
THC CONCENTRATION PPM	17.	10.	12.
CO CONCENTRATION PPM	37.	27.	30.
CO2 CONCENTRATION PCT	.9635	.5412	.8351
NOX CONCENTRATION PPM	19.6	8.2	14.7
FILTER WT. MG (EFFICIENCY, %)	3.263 [97.]	3.560 [96.]	2.408 [93.]
THC MASS GRAMS	1.00	.97	.71
CO MASS GRAMS	4.33	5.27	3.53
CO2 MASS GRAMS	1771.1	1688.7	1526.2
NOX MASS GRAMS	3.91	2.77	2.92
PARTICULATE MASS GRAMS	1.48	1.59	1.16
THC GRAMS/MI	.28	.25	.20
CO GRAMS/MI	1.20	1.36	.99
CO2 GRAMS/MI	490.8	434.8	427.2
NOX GRAMS/MI	1.08	.71	.82
FUEL ECONOMY IN MPG	20.60	23.23	23.60
RUN TIME SECONDS	510.	868.	507.
MEASURED DISTANCE MI	3.61	3.88	3.57
SCF, DRY	.974	.977	.975
DFC, WET (DRY)	.9441 [.929]		.949 [.933]
TOT VOL (SCM) / SAM BLR (SCM)	270.8/ 0.00		270.4/ 0.00
MI (MEASURED)	7.49		7.47
FUEL ECONOMY MPG	21.9		23.8
COMPOSITE RESULTS			
TEST NUMBER		3-BAG	{ 4-BAG}
BAROMETER MM HG 743.2		CARBON DIOXIDE G/MI 444.3	[440.3]
HUMIDITY G/KG 11.9		FUEL ECONOMY MPG 22.74	[22.85]
TEMPERATURE DEG C 27.2		HYDROCARBONS (THC) G/MI .24	[.24]
		CARBON MONOXIDE G/MI 1.22	[1.16]
		OXIDES OF NITROGEN G/MI .82	[.84]
		PARTICULATES G/MI .387	[.378]

TABLE B-8. MERCEDES BASELINE WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH HFET - VEHICLE EMISSIONS RESULTS - PROJECT 08-1280-001						
TEST NO.	RUN 1	VEHICLE NO.				
VEHICLE MODEL	86 MERCEDES 300SDL	DATE	5/15/87	TEST WEIGHT	1928. KG(4250. LBS)	
ENGINE 3.0 L(1B3. CID)	-6	BAG CART NO.	1	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)	
TRANSMISSION A3		DYNO NO.	2	DIESEL	EM-819-F	
		CVS NO.	17	ODOMETER	18599. KM(11557. MILES)	
BAROMETER	741.93 MM HG(29.21 IN HG)	DRY BULB TEMP.	25.6 DEG C(78.0 DEG F)			
RELATIVE HUMIDITY	57. PCT	ABS. HUMIDITY	11.9 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.04	
BAG RESULTS		TEST CYCLE				
BLOWER DIF P MM, H2O(IN, H2O)	1778.0 [70.0]					
BLOWER INLET P MM, H2O(IN, H2O)	1778.0 [70.0]					
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)					
BLOWER REVOLUTIONS	7482.					
TOT FLOW STD. CU. METRES(SCF)	150.4 (5310.)					
THC SAMPLE METER/RANGE/PPM	28.8/22/ 29.					
THC BCKGRD METER/RANGE/PPM	9.8/22/ 10.					
CO SAMPLE METER/RANGE/PPM	48.0/13/ 45.					
CO BCKGRD METER/RANGE/PPM	.7/13/ 1.					
CO2 SAMPLE METER/RANGE/PCT	64.2/ 3/1.1468					
CO2 BCKGRD METER/RANGE/PCT	3.2/ 3/ .0522					
NOX SAMPLE METER/RANGE/PPM	58.2/ 1/ 14.6					
NOX BCKGRD METER/RANGE/PPM	.7/ 1/ .2					
DILUTION FACTOR	11.71					
THC CONCENTRATION PPM	20.					
CO CONCENTRATION PPM	42.					
CO2 CONCENTRATION PCT	1.0991					
NOX CONCENTRATION PPM	14.4					
FILTER WT. MG (EFFICIENCY, %)	4.842 (96.)					
THC MASS GRAMS	1.72					
CO MASS GRAMS	7.44					
CO2 MASS GRAMS	3026.0					
NOX MASS GRAMS	4.32					
PARTICULATE MASS GRAMS	2.16					
RUN TIME	SECONDS	765.				
DFC, WET (DRY)	.815 (.898)					
SCF, WET (DRY)	1.000 (.971)					
VOL (SCM)	150.4					
SAM BLR (SCM)	0.00					
MI (MEASURED)	10.20					
TEST NUMBER,						
BAROMETER,	MM HG	741.9				
HUMIDITY,	G/KG	11.9				
TEMPERATURE,	DEG C	25.6				
CARBON DIOXIDE,	G/MI	296.6				
FUEL ECONOMY,	MPG	34.1				
HYDROCARBONS, [THC]	G/MI	.17				
CARBON MONOXIDE,	G/MI	.73				
OXIDES OF NITROGEN,	G/MI	.42				
PARTICULATES,	G/MI	.211				

TABLE B-9. MERCEDES BASELINE WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1260-001

TEST NO.	RUN 1	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL	DATE 5/15/87	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID)	-6	BAG CART NO. 1	DIESEL EM-819-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 18815. KM(11567. MILES)
BAROMETER	741.68 MM HG(28.20 IN HG)	CVS NO. 17	
RELATIVE HUMIDITY	54. PCT	DRY BULB TEMP. 26.7 DEG C(80.0 DEG F)	NOX HUMIDITY CORRECTION FACTOR 1.05
BAG RESULTS		ABS. HUMIDITY 12.2 GM/KG	
TEST CYCLE		NYCC	
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 [100.0]		
BLOWER REVOLUTIONS	5850.		
TOT FLOW STD. CU. METRES(SCF)	117.5 [4150.]		
THC SAMPLE METER/RANGE/PPM	17.1/22 17.		
THC BCKGRD METER/RANGE/PPM	12.7/22 13.		
CO SAMPLE METER/RANGE/PPM	27.9/13 25.		
CO BCKGRD METER/RANGE/PPM	.5/13 0.		
CO2 SAMPLE METER/RANGE/PCT	30.1/ 3/ .5026		
CO2 BCKGRD METER/RANGE/PCT	3.3/ 3/ .0538		
NOX SAMPLE METER/RANGE/PPM	42.3/ 1/ 10.6		
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .2		
DILUTION FACTOR	26.68		
THC CONCENTRATION PPM	5.		
CO CONCENTRATION PPM	24.		
CO2 CONCENTRATION PCT	.4508		
NOX CONCENTRATION PPM	10.5		
FILTER WT. MG [EFFICIENCY, %]	1.972 (94.)		
THC MASS GRAMS	.33		
CO MASS GRAMS	3.31		
CO2 MASS GRAMS	869.9		
NOX MASS GRAMS	2.48		
PARTICULATE MASS GRAMS	.94		
RUN TIME	SECONDS	598.	
DFC, WET [DRY]	.963 [.946]		
SCF, WET [DRY]	1.000 [.978]		
VOL (SCM)	117.5		
SAM BLR (SCM)	0.00		
MI (MEASURED)	1.19		
TEST NUMBER,			
BAROMETER,	MM HG	741.7	
HUMIDITY,	G/KG	12.2	
TEMPERATURE,	DEG C	26.7	
CARBON DIOXIDE,	G/MI	818.5	
FUEL ECONOMY,	MPG	12.3	
HYDROCARBONS, [THC]	G/MI	.28	
CARBON MONOXIDE,	G/MI	2.79	
OXIDES OF NITROGEN,	G/MI	2.09	
PARTICULATES,	G/MI	.792	

TABLE B-10. MERCEDES BASELINE WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	2	RUN	VEHICLE NO.		TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SD		DATE	5/18/87	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID)	-6		BAG CART NO.	1 / CVS NO. 17	DIESEL EM-619-F
TRANSMISSION A3			DYNO NO.	2	ODOMETER 18646. KM(11586. MILES)
BAROMETER	739.90 MM HG(29.13 IN HG)		DRY BULB TEMP.	27.2 DEG C(81.0 DEG F)	NOX HUMIDITY CORRECTION FACTOR 1.10
RELATIVE HUMIDITY	58. PCT		ABS. HUMIDITY	13.5 GM/KG	
BAG RESULTS					
BAG NUMBER			1	2	3
DESCRIPTION			COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM, H2O(IN, H2O)	1778.0 [70.0]		1778.0 [70.0]		1778.0 [70.0]
BLOWER INLET P MM, H2O(IN, H2O)	1778.0 [70.0]		1778.0 [70.0]		1778.0 [70.0]
BLOWER INLET TEMP, DEG. C(DEG. F)	45.6 [114.0]		45.6 [114.0]		43.3 [110.0]
BLOWER REVOLUTIONS	4954.		8487.		4945.
TOT FLOW STD. CU. METRES(SCF)	98.3 [3470.]		188.3 [5943.]		8484.
THC SAMPLE METER/RANGE/PPM	27.5/12/ .27.		20.3/12/ .20.		24.1/12/ .24.
THC BCKGRD METER/RANGE/PPM	11.8/12/ .12.		12.2/12/ .12.		12.6/12/ .13.
CO SAMPLE METER/RANGE/PPM	42.2/13/ .39.		27.1/13/ .25.		35.7/13/ .33.
CO BCKGRD METER/RANGE/PPM	.1/13/ .0.		0.0/13/ .0.		.1/13/ .0.
CO2 SAMPLE METER/RANGE/PCT	55.3/ 3/ .9700		33.3/ 3/ .5590		49.6/ 3/ .8597
CO2 BCKGRD METER/RANGE/PCT	3.0/ 3/ .0489		2.5/ 3/ .0408		2.9/ 3/ .0473
NOX SAMPLE METER/RANGE/PPM	88.6/ 1/ 22.2		39.9/ 1/ 10.0		69.6/ 1/ 17.5
NOX BCKGRD METER/RANGE/PPM	.3/ 1/ .1		.6/ 1/ .2		43.4/ 1/ 10.9
DILUTION FACTOR	13.84		.6/ 1/ .2		.4/ 1/ .1
THC CONCENTRATION PPM	17.		23.89		15.62
CO CONCENTRATION PPM	38.		9.		12.
CO2 CONCENTRATION PCT	.9246		24.		32.
NOX CONCENTRATION PPM	22.1		.5198		.8154
FILTER WT. MG (EFFICIENCY, %)	3.236 [97.]		3.841 [98.]		2.713 [97.]
THC MASS GRAMS	.94		.83		.70
CO MASS GRAMS	4.29		4.67		3.92
CO2 MASS GRAMS	1663.3		1602.1		1474.0
NOX MASS GRAMS	4.58		3.51		3.82
PARTICULATE MASS GRAMS	1.44		1.72		1.20
THC GRAMS/MI	.26		.21		.19
CO GRAMS/MI	1.20		1.20		1.16
CO2 GRAMS/MI	463.5		413.2		409.1
NOX GRAMS/MI	1.28		.91		1.00
FUEL ECONOMY IN MPG	21.81		24.45		24.72
RUN TIME	SECONDS				
MEASURED DISTANCE	MI		506.		506.
SCF, DRY			3.59		3.80
DFC, WET [DRY]			.972		.976
TOT VOL (SCM) / SAM BLR (SCM)			.947[.929]		.950[.932]
MI (MEASURED)			266.6/ 0.00		267.8/ 0.00
FUEL ECONOMY MPG			7.47		7.48
			23.1		24.4
COMPOSITE RESULTS					
TEST NUMBER	2			3-BAG	[4-BAG]
BAROMETER	MM HG	739.9		CARBON DIOXIDE	G/MI 422.5 [424.5]
HUMIDITY	G/KG	13.5		FUEL ECONOMY	MPG 23.92 [23.81]
TEMPERATURE	DEG C	27.2		HYDROCARBONS (THC)	G/MI .22 [.22]
				CARBON MONOXIDE	G/MI 1.15 [1.14]
				OXIDES OF NITROGEN	G/MI 1.01 [1.03]
				PARTICULATES	G/MI .404 [.392]

TABLE B-11. MERCEDES BASELINE WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	2	RUN	2	VEHICLE NO.		TEST WEIGHT	1929. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL			DATE	5/18/87	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID)	-6			BAG CART NO.	1	DIESEL	EN-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	18670. KM(11601. MILES)
				CVS NO.	17		
BAROMETER	739.14 MM HG(29.10 IN HG)			DRY BULB TEMP.	26.7 DEG C(80.0 DEG F)		
RELATIVE HUMIDITY	54. PCT			ABS. HUMIDITY	12.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.05
BAG RESULTS							
TEST CYCLE							
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 [70.0]			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 [70.0]			
BLOWER INLET TEMP. DEG. C(DEG. F)				45.0 [113.0]			
BLOWER REVOLUTIONS				7483.			
TOT FLOW STD. CU. METRES(SCF)				148.4 [5241.]			
THC SAMPLE METER/RANGE/PPM				31.8/12/ 32.			
THC BCKGRD METER/RANGE/PPM				14.5/12/ 15.			
CO SAMPLE METER/RANGE/PPM				48.4/13/ 43.			
CO BCKGRD METER/RANGE/PPM				0.0/13/ 0.			
CO2 SAMPLE METER/RANGE/PCT				64.9/ 3/1.1609			
CO2 BCKGRD METER/RANGE/PCT				2.9/ 3/ .0473			
NOX SAMPLE METER/RANGE/PPM				75.2/ 1/ 18.9			
NOX BCKGRD METER/RANGE/PPM				.8/ 1/ .2			
DILUTION FACTOR				11.57			
THC CONCENTRATION PPM				19.			
CO CONCENTRATION PPM				42.			
CO2 CONCENTRATION PCT				1.1178			
NOX CONCENTRATION PPM				18.7			
FILTER WT. MG (EFFICIENCY, %)				4.703 [98.]			
THC MASS GRAMS				1.58			
CO MASS GRAMS				7.17			
CO2 MASS GRAMS				3037.4			
NOX MASS GRAMS				5.58			
PARTICULATE MASS GRAMS				2.08			
RUN TIME	SECONDS			766.			
DFC, WET [DRY]				.914 [.898]			
SCF, WET [DRY]				1.000 [.972]			
VOL (SCM)				148.4			
SAM BLR (SCM)				0.00			
MI (MEASURED)				10.19			
TEST NUMBER,				2			
BAROMETER,	MM HG			739.1			
HUMIDITY,	G/KG			12.2			
TEMPERATURE,	DEG C			26.7			
CARBON DIOXIDE,	G/MI			299.2			
FUEL ECONOMY,	MPG			33.9			
HYDROCARBONS, [THC]	G/MI			.16			
CARBON MONOXIDE,	G/MI			.70			
OXIDES OF NITROGEN,	G/MI			.55			
PARTICULATES,	G/MI			.204			

TABLE B-12. MERCEDES BASELINE WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	2	RUN	2	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL	DATE	5/18/87	ACTUAL ROAD LOAD	7.8 KW(10.6 HP)	DIESEL	EM-619-F
ENGINE 3.0 L[183. CID]	-6	BAG CART NO.	1	ODOOMETER	18686. KM(11611. MILES)		
TRANSMISSION A3		DYNO NO.	2				
		CVS NO.	17				
BAROMETER 739.14 MM HG(29.10 IN HG)				DRY BULB TEMP.	26.7 DEG C(80.0 DEG F)		
RELATIVE HUMIDITY 54. PCT				ABS. HUMIDITY	12.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.05	
BAG RESULTS				TEST CYCLE			
				NYCC			
BLOWER DIF P MM, H2O(IN. H2O)		1778.0 (70.0)					
BLOWER INLET P MM, H2O(IN. H2O)		1778.0 (70.0)					
BLOWER INLET TEMP. DEG. C(DEG. F)		43.3 (110.0)					
BLOWER REVOLUTIONS		5860.					
TOT FLOW STD. CU. METRES(SCF)		116.8 (4125.)					
THC SAMPLE METER/RANGE/PPM		20.1/12/ 20.					
THC BCKGRD METER/RANGE/PPM		14.9/12/ 15.					
CO SAMPLE METER/RANGE/PPM		20.6/13/ 18.					
CO BCKGRD METER/RANGE/PPM		.3/13/ 0.					
CO2 SAMPLE METER/RANGE/PCT		58.4/11/ .4513					
CO2 BCKGRD METER/RANGE/PCT		7.4/11/ .0440					
NOX SAMPLE METER/RANGE/PPM		48.4/ 1/ 12.2					
NOX BCKGRD METER/RANGE/PPM		1.6/ 1/ .4					
DILUTION FACTOR		29.71					
THC CONCENTRATION PPM		6.					
CO CONCENTRATION PPM		18.					
CO2 CONCENTRATION PCT		.4088					
NOX CONCENTRATION PPM		11.8					
FILTER WT. MG [EFFICIENCY, %]		1.641 (97.)					
THC MASS GRAMS		.39					
CO MASS GRAMS		2.41					
CO2 MASS GRAMS		874.3					
NOX MASS GRAMS		2.76					
PARTICULATE MASS GRAMS		.73					
RUN TIME	SECONDS	600.					
DFC, WET (DRY)		.966 (.949)					
SCF, WET (DRY)		1.000 (.978)					
VOL (SCM)		116.8					
SAM BLR (SCM)		0.00					
MI (MEASURED)		1.19					
TEST NUMBER,		2					
BAROMETER,	MM HG	739.1					
HUMIDITY,	G/KG	12.2					
TEMPERATURE,	DEG C	26.7					
CARBON DIOXIDE,	G/MI	734.1					
FUEL ECONOMY,	MPC	13.8					
HYDROCARBONS, [THC]	G/MI	.33					
CARBON MONOXIDE,	G/MI	2.03					
OXIDES OF NITROGEN,	G/MI	2.32					
PARTICULATES,	G/MI	.613					

TABLE B-13. MERCEDES REGENERATION TEST, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	R-1	RUN	VEHICLE NO.	TEST WEIGHT 1926. KG(4250. LBS)
VEHICLE MODEL	86 Mercedes	300SDL	DATE 6/23/87	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L[183. CID]	-6		BAG CART NO. 2	DIESEL EM-619-F
TRANSMISSION A3			DYNO NO. 2	ODOMETER 18907. KM[11748. MILES]
CVS NO.	17			
BAROMETER 740.16 MM HG[29.14 IN HG]			DRY BULB TEMP. 26.1 DEG C(79.0 DEG F)	
RELATIVE HUMIDITY 64. PCT			ABS. HUMIDITY 14.0 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.12
BAG RESULTS				
TEST CYCLE			HFET	
BLOWER DIF P MM. H2O(IN. H2O)			1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)			1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)			41.1 (106.0)	
BLOWER REVOLUTIONS			7481.	
TOT FLOW STD. CU. METRES(SCF)			150.2 (5305.)	
THC SAMPLE METER/RANGE/PPM			15.0/12/ 15.	
THC BCKGRD METER/RANGE/PPM			9.1/12/ 9.	
CO SAMPLE METER/RANGE/PPM			79.0/13/ 195.	
CO BCKGRD METER/RANGE/PPM			.0/13/ 0.	
CO2 SAMPLE METER/RANGE/PCT			79.6/ 1/1.4712	
CO2 BCKGRD METER/RANGE/PCT			2.3/ 1/ .0406	
NOX SAMPLE METER/RANGE/PPM			78.7/ 1/ 19.7	
NOX BCKGRD METER/RANGE/PPM			.6/ 1/ .2	
DILUTION FACTOR			9.07	
THC CONCENTRATION PPM			7.	
CO CONCENTRATION PPM			165.	
CO2 CONCENTRATION PCT			1.4351	
NOX CONCENTRATION PPM			19.6	
FILTER WT. MG (EFFICIENCY, %)			2.000 (97.)	
THC MASS GRAMS			.60	
CO MASS GRAMS			32.43	
CO2 MASS GRAMS			3947.3	
NOX MASS GRAMS			6.31	
PARTICULATE MASS GRAMS			.75	
RUN TIME SECONDS			766.	
DFC, WET (DRY)			.890 (.871)	
SCF, WET (DRY)			1.000 (.966)	
VOL (SCM)			150.2	
SAM BLR (SCM)			.00	
MI (MEASURED)			10.22	
TEST NUMBER,			R-1	
BAROMETER,	MM HG		740.2	
HUMIDITY,	G/KG		14.0	
TEMPERATURE,	DEG C		26.1	
CARBON DIOXIDE,	G/MI		386.1	
FUEL ECONOMY,	MPG		26.0	
HYDROCARBONS, [THC]	G/MI		.06	
CARBON MONOXIDE,	G/MI		3.17	
OXIDES OF NITROGEN,	G/MI		.62	
PARTICULATES,	G/MI		.073	

TABLE B-14. MERCEDES REGENERATION TEST, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT DB-1280-001

TEST NO.	T-R 2	RUN	VEHICLE NO.	TEST WEIGHT 1828. KG [4250. LBS]
VEHICLE MODEL	86 Mercedes 300SDL		DATE 6/24/87	ACTUAL ROAD LOAD 7.9 KW[10.6 HP]
ENGINE 3.0 L(183. CID)	-6		BAG CART NO. 2	DIESEL EM-619-F
TRANSMISSION A3			DYNO NO. 2	ODOMETER 18907. KM[11748. MILES]
BAROMETER	739.65 MM HG[29.12 IN HG]		CVS NO. 17	
RELATIVE HUMIDITY	56. PCT		DRY BULB TEMP. 25.0 DEG C[77.0 DEG F]	
BAG RESULTS			ABS. HUMIDITY 11.4 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.02
TEST CYCLE			HFET	
BLOWER DIF P MM. H2O(IN. H2O)	1778.0	(70.0)		
BLOWER INLET P MM. H2O(IN. H2O)	1778.0	[70.0]		
BLOWER INLET TEMP. DEG. C(DEG. F)	45.0	[113.0]		
BLOWER REVOLUTIONS	7487.			
TOT FLOW STD. CU. METRES(SCF)	148.7	[5250.]		
THC SAMPLE METER/RANGE/PPM	18.0/12/	18.		
THC BCKGRD METER/RANGE/PPM	12.6/12/	13.		
CO SAMPLE METER/RANGE/PPM	67.9/13/	165.		
CO BCKGRD METER/RANGE/PPM	.1/13/	0.		
CO2 SAMPLE METER/RANGE/PCT	81.9/ 1/1.5150			
CO2 BCKGRD METER/RANGE/PCT	2.9/ 1/ .0512			
NOX SAMPLE METER/RANGE/PPM	20.5/ 2/ 20.6			
NOX BCKGRD METER/RANGE/PPM	.1/ 2/ .1			
DILUTION FACTOR	8.82			
THC CONCENTRATION PPM	7.			
CO CONCENTRATION PPM	157.			
CO2 CONCENTRATION PCT	1.4896			
NOX CONCENTRATION PPM	20.5			
FILTER WT. MG [EFFICIENCY, %]	2.000 [97.]			
THC MASS GRAMS	.59			
CO MASS GRAMS	27.22			
CO2 MASS GRAMS	4000.4			
NOX MASS GRAMS	5.96			
PARTICULATE MASS GRAMS	.65			
RUN TIME	SECONDS			
DFC, WET (DRY)	765.			
SCF, WET (DRY)	.887 (.871)			
VOL (SCM)	1.000 (.968)			
SAM BLR (SCM)	148.7			
MI (MEASURED)	.00			
	10.23			
TEST NUMBER,		T-R2		
BAROMETER,	MM HG	739.6		
HUMIDITY,	G/KG	11.4		
TEMPERATURE,	DEG C	25.0		
CARBON DIOXIDE,	G/MI	391.0		
FUEL ECONOMY,	MPG	25.7		
HYDROCARBONS, (THC)	G/MI	.06		
CARBON MONOXIDE,	G/MI	2.66		
OXIDES OF NITROGEN,	G/MI	.58		
PARTICULATES,	G/MI	.064		

TABLE B-15. MERCEDES LOADED TRAP TEST, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	L-1	RUN	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL	66 MERCEDES 300SDL		DATE 6/23/87	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L[183. CID]	-6		BAG CART NO. 2	DIESEL EM-619-F
TRANSMISSION A3			DYNO NO. 2	ODOMETER 18905. KM(11747. MILES)
BAROMETER 740.16 MM HG[29.14 IN HG]			CVS NO. 17	
RELATIVE HUMIDITY 64. PCT				
BAG RESULTS				
TEST CYCLE				
BLOWER DIF P MM. H2O(IN. H2O)			DRY BULB TEMP. 26.1 DEG C(79.0 DEG F)	
BLOWER INLET P MM. H2O(IN. H2O)			ABS. HUMIDITY 14.0 GM/KG	
BLOWER INLET TEMP. DEG. C(DEG. F)				NOX HUMIDITY CORRECTION FACTOR 1.12
BLOWER REVOLUTIONS				
TOT FLOW STD. CU. METRES(SCF)			NYCC	
THC SAMPLE METER/RANGE/PPM			1778.0 [70.0]	
THC BCKGRD METER/RANGE/PPM			1778.0 [70.0]	
CO SAMPLE METER/RANGE/PPM			41.1 [106.0]	
CO BCKGRD METER/RANGE/PPM			5844.	
CO2 SAMPLE METER/RANGE/PCT			117.4 (4144.)	
CO2 BCKGRD METER/RANGE/PCT			10.0/12/ 10.	
NOX SAMPLE METER/RANGE/PPM			9.1/12/ 9.	
NOX BCKGRD METER/RANGE/PPM			62.6/12/ 64.	
DILUTION FACTOR			.0/12/ 0.	
THC CONCENTRATION PPM			74.2/14/ .5650	
CO CONCENTRATION PPM			11.7/14/ .0404	
CO2 CONCENTRATION PCT			42.3/ 1/ 10.6	
NOX CONCENTRATION PPM			1.0/ 1/ .3	
FILTER WT. MG (EFFICIENCY, %)			23.63	
THC MASS GRAMS			1.	
CO MASS GRAMS			.09	
CO2 MASS GRAMS			.62	
NOX MASS GRAMS			.5263	
PARTICULATE MASS GRAMS			10.4	
RUN TIME SECONDS			.000 (.88.)	
DFC, WET (DRY)			.09	
SCF, WET (DRY)			1130.9	
VOL (SCM)			8.42	
SAM BLR (SCM)			2.61	
MI [MEASURED]			.02	
			598.	
TEST NUMBER,				
BAROMETER, MM HG			L-1	
HUMIDITY, G/KG			740.2	
TEMPERATURE, DEG C			14.0	
CARBON DIOXIDE, G/MI			26.1	
FUEL ECONOMY, MPG			967.6	
			10.4	
HYDROCARBONS, (THC) G/MI			.08	
CARBON MONOXIDE, G/MI			7.20	
OXIDES OF NITROGEN, G/MI			2.23	
PARTICULATES, G/MI			.019	

TABLE B-16. MERCEDES BASELINE WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

FTP - VEHICLE EMISSIONS RESULTS -

PROJECT 08-1280-001

TEST NO. 2	RUN 3	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 8/21/87	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0.L(183. CID) -6		BAG CART NO. 1 / CVS NO. 17	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 19093. KM(11864. MILES)
BAROMETER 744.73 MM HG(29.32 IN HG)		DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)	
RELATIVE HUMIDITY 52. PCT		ABS. HUMIDITY 10.6 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.00
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	43.3 (110.0)	43.3 (110.0)	41.7 (107.0)
BLOWER REVOLUTIONS	4956.	8485.	4951.
TOT FLOW STD. CU. METRES(SCF)	99.8 (3525.)	170.9 (6034.)	100.2 (3537.)
THC SAMPLE METER/RANGE/PPM	26.5/12/ 26.	17.4/12/ 17.	18.5/12/ 18.
THC BCKGRD METER/RANGE/PPM	6.5/12/ 7.	6.5/12/ 7.	6.5/12/ 7.
CO SAMPLE METER/RANGE/PPM	40.3/13/ 37.	27.1/13/ 25.	32.2/13/ 29.
CO BCKGRD METER/RANGE/PPM	.9/13/ 1.	.5/13/ 0.	.3/13/ 0.
CO2 SAMPLE METER/RANGE/PCT	97.1/11/1.0071	67.1/11/ .5730	85.0/11/ .8126
CO2 BCKGRD METER/RANGE/PCT	8.0/11/ .0477	7.8/11/ .0465	7.8/11/ .0465
NOX SAMPLE METER/RANGE/PPM	89.9/ 1/ 22.5	39.7/ 1/ 10.0	64.5/ 1/ 16.2
NOX BCKGRD METER/RANGE/PPM	1.2/ 1/ .3	1.2/ 1/ .3	.6/ 1/ .2
DILUTION FACTOR	13.34	23.42	16.54
THC CONCENTRATION PPM	20.	11.	12.
CO CONCENTRATION PPM	35.	23.	28.
CO2 CONCENTRATION PCT	.9630	.5285	.7690
NOX CONCENTRATION PPM	22.2	9.7	16.0
FILTER WT. MG (EFFICIENCY, %)	3.081 (98.)	3.130 (98.)	2.225 (***)
THC MASS GRAMS	1.18	1.10	.71
CO MASS GRAMS	4.08	4.66	3.29
CO2 MASS GRAMS	1760.0	1653.5	1410.4
NOX MASS GRAMS	4.23	3.16	3.06
PARTICULATE MASS GRAMS	1.34	1.39	.99
THC GRAMS/MI	.33	.28	.20
CO GRAMS/MI	1.13	1.20	.92
CO2 GRAMS/MI	488.3	426.4	394.7
NOX GRAMS/MI	1.17	.81	.86
FUEL ECONOMY IN MPG	20.70	22.15	23.69
RUN TIME SECONDS	507.	868.	505.
MEASURED DISTANCE MI	3.60	7.48	3.88
SCF, DRY	.974	.976	.978
DFC, WET (DRY)	.945(.929)		.951(.935)
TOT VOL (SCM) / SAM BLR (SCM)	270.7/ .00		271.2/ .00
COMPOSITE RESULTS			
TEST NUMBER			3-BAG (4-BAG)
BAROMETER MM HG 744.7		CARBON DIOXIDE G/MI	430.5 (428.9)
HUMIDITY G/KG 10.6		FUEL ECONOMY MPG	23.47 (23.56)
TEMPERATURE DEG C 25.0		HYDROCARBONS (THC) G/MI	.27 (.26)
		CARBON MONOXIDE G/MI	1.11 (1.08)
		OXIDES OF NITROGEN G/MI	.90 (.92)
		PARTICULATES G/MI	.338 (.339)

TABLE B-17. MERCEDES WITHOUT TRAP AND WITH LOW AROMATIC FUEL, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 4	RUN 1	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 8/25/87	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) -6		BAG CART NO. 1 / CVS NO. 17	DIESEL EM-752-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 19199. KM(11930. MILES)
BAROMETER 744.22 MM HG(29.30 IN HG)		DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)	
RELATIVE HUMIDITY 60. PCT		ABS. HUMIDITY 12.1 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.05
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)	42.2 (108.0)	41.1 (106.0)
BLOWER REVOLUTIONS	4949.	8482.	4941.
TOT FLOW STD. CU. METRES(SCF)	100.0 (3531.)	171.2 (6044.)	100.0 (3530.)
THC SAMPLE METER/RANGE/PPM	20.3/12/ 20.	14.3/12/ 14.	19.3/12/ 19.
THC BCKGRD METER/RANGE/PPM	6.3/12/ 6.	6.3/12/ 6.	7.8/12/ 8.
CO SAMPLE METER/RANGE/PPM	36.8/13/ 34.	26.3/13/ 24.	32.8/13/ 30.
CO BCKGRD METER/RANGE/PPM	.6/13/ 1.	.2/13/ 0.	.4/13/ 0.
CO2 SAMPLE METER/RANGE/PCT	95.1/11/ .9728	66.0/11/ .5598	86.0/11/ .8276
CO2 BCKGRD METER/RANGE/PCT	7.7/11/ .0458	7.5/11/ .0446	7.7/11/ .0458
NOX SAMPLE METER/RANGE/PPM	87.5/ 1/ 21.9	38.3/ 1/ 9.6	65.5/ 1/ 16.4
NOX BCKGRD METER/RANGE/PPM	.8/ 1/ .2	.8/ 1/ .2	.4/ 1/ .1
DILUTION FACTOR	13.43	23.31	15.78
THC CONCENTRATION PPM	15.	8.	12.
CO CONCENTRATION PPM	32.	23.	29.
CO2 CONCENTRATION PCT	.9304	.5171	.7846
NOX CONCENTRATION PPM	21.7	9.4	16.3
FILTER WT. MG (EFFICIENCY, %)	3.092 (99.)	2.650 (99.)	2.097 (99.)
THC MASS GRAMS	.84	.83	.70
CO MASS GRAMS	3.73	4.56	3.32
CO2 MASS GRAMS	1703.6	1620.4	1436.1
NOX MASS GRAMS	4.35	3.24	3.27
PARTICULATE MASS GRAMS	1.35	1.18	.91
THC GRAMS/MI	.23	.21	.19
CO GRAMS/MI	1.03	1.17	.92
CO2 GRAMS/MI	471.3	415.9	398.5
NOX GRAMS/MI	1.20	.83	.91
FUEL ECONOMY IN MPG	20.52	21.84	23.23
RUN TIME SECONDS	506.	868.	505.
MEASURED DISTANCE MI	3.61	7.51	3.90
SCF, DRY	.971	.974	.975
DFC, WET (DRY)	.945(.927)		.951(.932)
TOT VOL (SCM) / SAM BLR (SCM)	271.2/ .00		271.6/ .00
COMPOSITE RESULTS			
TEST NUMBER			3-BAG (4-BAG)
BAROMETER MM HG 744.2		CARBON DIOXIDE G/MI	422.6 (418.4)
HUMIDITY G/KG 12.1		FUEL ECONOMY MPG	22.87 (23.10)
TEMPERATURE DEG C 25.0		HYDROCARBONS (THC) G/MI	.21 (.22)
		CARBON MONOXIDE G/MI	1.07 (1.03)
		OXIDES OF NITROGEN G/MI	.93 (.92)
		PARTICULATES G/MI	.304 (.299)

TABLE B-18. MERCEDES WITHOUT TRAP AND WITH LOW AROMATIC FUEL, FTP
 SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 4	RUN 2	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 8/27/87	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) -6		BAG CART NO. 1 / CVS NO. 17	DIESEL EM-752-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 19240. KM(11955. MILES)
BAROMETER 744.47 MM HG(29.31 IN HG)		DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)	
RELATIVE HUMIDITY 61. PCT		ABS. HUMIDITY 10.9 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.01
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	42.2 (108.0)	41.7 (107.0)
BLOWER REVOLUTIONS	4930.	8491.	4934.
TOT FLOW STD. CU. METRES(SCF)	99.5 (3514.)	171.4 (6053.)	99.7 (3522.)
THC SAMPLE METER/RANGE/PPM	24.9/12/ 25.	17.3/12/ 17.	18.8/12/ 19.
THC BCKGRD METER/RANGE/PPM	7.9/12/ 8.	7.9/12/ 8.	7.7/12/ 8.
CO SAMPLE METER/RANGE/PPM	38.5/13/ 35.	28.1/13/ 25.	31.6/13/ 29.
CO BCKGRD METER/RANGE/PPM	1.5/13/ 1.	1.8/13/ 2.	.9/13/ 1.
CO2 SAMPLE METER/RANGE/PCT	96.4/11/ .9950	65.2/11/ .5503	86.8/11/ .8397
CO2 BCKGRD METER/RANGE/PCT	7.5/11/ .0446	7.6/11/ .0452	7.2/11/ .0427
NOX SAMPLE METER/RANGE/PPM	81.6/ 1/ 20.5	34.8/ 1/ 8.8	60.5/ 1/ 15.2
NOX BCKGRD METER/RANGE/PPM	.3/ 1/ .0	.5/ 1/ .1	.0/ 1/ .0
DILUTION FACTOR	13.12	23.68	15.56
THC CONCENTRATION PPM	18.	10.	12.
CO CONCENTRATION PPM	33.	23.	27.
CO2 CONCENTRATION PCT	.9538	.5070	.7997
NOX CONCENTRATION PPM	20.4	8.7	15.2
FILTER WT. MG (EFFICIENCY, %)	2.285 (98.)	2.864 (99.)	1.897 (98.)
THC MASS GRAMS	1.02	.97	.67
CO MASS GRAMS	3.81	4.63	3.14
CO2 MASS GRAMS	1738.0	1591.4	1460.3
NOX MASS GRAMS	3.90	2.85	2.91
PARTICULATE MASS GRAMS	1.01	1.28	.83
THC GRAMS/MI	.28	.25	.19
CO GRAMS/MI	1.06	1.20	.87
CO2 GRAMS/MI	482.1	412.6	406.8
NOX GRAMS/MI	1.08	.74	.81
FUEL ECONOMY IN MPG	20.06	21.66	23.40
RUN TIME SECONDS	505.	868.	505.
MEASURED DISTANCE MI	3.61	7.46	3.86
SCF, DRY	.970	.973	.975
DFC, WET (DRY)	.945(.927)		.950(.931)
TOT VOL (SCM) / SAM BLR (SCM)	271.0/ .00		271.0/ .00
COMPOSITE RESULTS			
TEST NUMBER			3-BAG (4-BAG)
BAROMETER MM HG 744.5		CARBON DIOXIDE G/MI	425.4 (425.0)
HUMIDITY G/KG 10.9		FUEL ECONOMY MPG	22.71 (22.74)
TEMPERATURE DEG C 22.8		HYDROCARBONS (THC) G/MI	.24 (.24)
		CARBON MONOXIDE G/MI	1.08 (1.06)
		OXIDES OF NITROGEN G/MI	.83 (.84)
		PARTICULATES G/MI	.294 (.282)

TABLE B-19. MERCEDES BASELINE WITH REPLACEMENT TRAP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO. 11	RUN 1	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 2/25/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 2 / CVS NO. 17	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 19396. KM(12052. MILES)
BAROMETER 748.28 MM HG(29.46 IN HG)	DRY BULB TEMP. 26.7 DEG C(80.0 DEG F)		
RELATIVE HUMIDITY 38. PCT	ABS. HUMIDITY 8.4 GM/KG	NOX HUMIDITY CORRECTION FACTOR .93	
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1524.0 (60.0)	1524.0 (60.0)	1524.0 (60.0)
BLOWER INLET P MM. H2O(IN. H2O)	1524.0 (60.0)	1524.0 (60.0)	1524.0 (60.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	43.9 (111.0)	44.4 (112.0)	43.3 (110.0)
BLOWER REVOLUTIONS	4970.	8541.	4963.
TOT FLOW STD. CU. METRES(SCF)	105.4 (3721.)	180.7 (6382.)	105.4 (3722.)
THC SAMPLE METER/RANGE/PPM	16.5/22/ 16.	14.3/22/ 14.	18.1/22/ 18.
THC BCKGRD METER/RANGE/PPM	5.6/22/ 6.	5.6/22/ 6.	7.9/22/ 8.
CO SAMPLE METER/RANGE/PPM	70.1/12/ 70.	63.9/12/ 64.	36.6/12/ 97.
CO BCKGRD METER/RANGE/PPM	1.1/12/ 1.	1.2/12/ 1.	1.0/12/ 1.
CO2 SAMPLE METER/RANGE/PCT	97.2/17/ .9909	76.5/17/ .6949	92.6/17/ .9211
CO2 BCKGRD METER/RANGE/PCT	13.4/17/ .0865	13.5/17/ .0872	14.0/17/ .0906
NOX SAMPLE METER/RANGE/PPM	83.9/ 1/ 21.0	33.0/ 1/ 8.3	59.8/ 1/ 15.0
NOX BCKGRD METER/RANGE/PPM	.3/ 1/ .0	.4/ 1/ .1	.2/ 1/ .0
DILUTION FACTOR	13.53	19.24	14.50
THC CONCENTRATION PPM	11.	9.	11.
CO CONCENTRATION PPM	67.	81.	93.
CO2 CONCENTRATION PCT	.9107	.8122	.8367
NOX CONCENTRATION PPM	20.9	8.2	14.9
FILTER WT. MG (EFFICIENCY, %)	1.204 (98.)	.440 (88.)	.397 (93.)
THC MASS GRAMS	.69	.93	.65
CO MASS GRAMS	8.23	12.89	11.40
CO2 MASS GRAMS	1756.9	2025.8	1614.6
NOX MASS GRAMS	3.92	2.64	2.80
PARTICULATE MASS GRAMS	.52	.23	.19
THC GRAMS/MI	.19	.24	.18
CO GRAMS/MI	2.26	3.29	3.13
CO2 GRAMS/MI	482.0	517.5	443.7
NOX GRAMS/MI	1.08	.68	.77
FUEL ECONOMY IN MPG	20.91	20.11	19.42
RUN TIME SECONDS	505.	869.	505.
MEASURED DISTANCE MI	3.64	7.56	3.91
SCF, DRY	.979	.980	.981
DFC, WET (DRY)	.940(.928)		.942(.931)
TOT VOL (SCM) / SAM BLR (SCM)	286.1/ .00		286.6/ .00

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG	748.3	CARBON DIOXIDE G/MI	489.9 (481.3)
HUMIDITY G/KG	8.4	FUEL ECONOMY MPG	20.53 (20.89)
TEMPERATURE DEG C	26.7	HYDROCARBONS (THC) G/MI	.21 (.20)
		CARBON MONOXIDE G/MI	3.03 (2.95)
		OXIDES OF NITROGEN G/MI	.78 (.78)
		PARTICULATES G/MI	.075 (.072)

TABLE B-20. MERCEDES BASELINE WITH REPLACEMENT TRAP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	11	RUN	2	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL	DATE	3/ 1/88			ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO.	1 / CVS NO.	17		DIESEL	EM-619-F
TRANSMISSION A3		DYNO NO.	2			ODOMETER	19447. KM(12084. MILES)
BAROMETER	743.20 MM HG(29.26 IN HG)	DRY BULB TEMP.	24.4 DEG C(76.0 DEG F)				
RELATIVE HUMIDITY	55. PCT	ABS. HUMIDITY	10.9 GM/KG			NOX HUMIDITY CORRECTION FACTOR	1.01
BAG RESULTS							
BAG NUMBER	1	2	3	4			
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED			
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)	43.3 (110.0)	43.3 (110.0)	44.4 (112.0)			
BLOWER REVOLUTIONS	4948.	8510.	4947.	8506.			
TOT FLOW STD. CU. METRES(SCF)	99.8 (3525.)	171.0 (6038.)	99.4 (3510.)	170.3 (6014.)			
THC SAMPLE METER/RANGE/PPM	17.0/22/ 17.	14.4/22/ 14.	16.1/22/ 16.	15.4/22/ 15.			
THC BCKGRD METER/RANGE/PPM	6.5/22/ 7.	6.5/22/ 7.	8.2/22/ 8.	8.2/22/ 8.			
CO SAMPLE METER/RANGE/PPM	88.4/13/ 89.	72.7/13/ 71.	92.7/13/ 94.	69.9/13/ 68.			
CO BCKGRD METER/RANGE/PPM	1.7/13/ 1.	2.0/13/ 2.	1.8/13/ 2.	1.6/13/ 1.			
CO2 SAMPLE METER/RANGE/PCT	64.0/ 3/1.1428	73.3/11/ .6504	61.9/ 3/1.1007	74.0/11/ .6595			
CO2 BCKGRD METER/RANGE/PCT	3.5/ 3/ .0571	7.9/11/ .0471	3.9/ 3/ .0636	8.0/11/ .0477			
NOX SAMPLE METER/RANGE/PPM	86.4/ 1/ 21.6	33.2/ 1/ 8.4	62.2/ 1/ 15.6	33.9/ 1/ 8.6			
NOX BCKGRD METER/RANGE/PPM	1.0/ 1/ .3	.3/ 1/ .0	.1/ 1/ .0	.1/ 1/ .0			
DILUTION FACTOR	11.72	20.52	12.16	20.25			
THC CONCENTRATION PPM	11.	8.	9.	8.			
CO CONCENTRATION PPM	84.	67.	89.	64.			
CO2 CONCENTRATION PCT	1.0906	.6056	1.0423	.6142			
NOX CONCENTRATION PPM	21.4	8.3	15.6	8.5			
FILTER WT. MG (EFFICIENCY, %)	.559 (74.)	.380 (87.)	.340 (91.)	.384 (91.)			
THC MASS GRAMS	.64	.81	.49	.74			
CO MASS GRAMS	9.74	13.33	10.27	12.75			
CO2 MASS GRAMS	1993.6	1896.1	1896.9	1915.1			
NOX MASS GRAMS	4.11	2.73	2.98	2.79			
PARTICULATE MASS GRAMS	.33	.19	.16	.19			
THC GRAMS/MI	.17	.21	.14	.19			
CO GRAMS/MI	2.67	3.42	2.83	3.27			
CO2 GRAMS/MI	547.1	485.9	522.4	490.7			
NOX GRAMS/MI	1.13	.70	.82	.72			
FUEL ECONOMY IN MPG	18.42	19.52	19.28	19.88	20.48		
RUN TIME	SECONDS	505.	868.	505.	868.		
MEASURED DISTANCE	MI	3.64	7.55	3.63	7.53	3.90	
SCF, DRY		.972	.975	.976	.972	.975	.976
DFC, WET (DRY)		.938(.921)			.939(.922)		
TOT VOL (SCM) / SAM BLR (SCM)		270.8/ .00			269.7/ .00		

COMPOSITE RESULTS

TEST NUMBER			3-BAG	(4-BAG)
BAROMETER	MM HG	743.2	CARBON DIOXIDE	6/MI
HUMIDITY	G/KG	10.9	FUEL ECONOMY	MPG
TEMPERATURE	DEG C	24.4	HYDROCARBONS (THC)	G/MI
			CARBON MONOXIDE	G/MI
			OXIDES OF NITROGEN	G/MI
			PARTICULATES	G/MI

TABLE B-21. MERCEDES WITH REPLACEMENT TRAP AND LOW AROMATIC FUEL, FTP
 SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 13	RUN 1	VEHICLE NO.	TEST WEIGHT 1928. KG (4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 3/3/88	ACTUAL ROAD LOAD 7.9 KW (10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 2 / CVS NO. 17	DIESEL EM-752-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 19578. KM(12165. MILES)
BAROMETER 741.17 MM HG (29.18 IN HG)		DRY BULB TEMP. 22.2 DEG C (72.0 DEG F)	
RELATIVE HUMIDITY 25. PCT		ABS. HUMIDITY 4.3 GM/KG	NOX HUMIDITY CORRECTION FACTOR .83
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.1 (106.0)	41.7 (107.0)	39.4 (103.0)
BLOWER REVOLUTIONS	4944.	8508.	4949.
TOT FLOW STD. CU. METRES(SCF)	99.5 (3514.)	171.1 (6040.)	100.0 (3532.)
THC SAMPLE METER/RANGE/PPM	10.6/1022/ 11.	9.0/1022/ 9.	10.8/1022/ 11.
THC BKGRD METER/RANGE/PPM	3.2/1022/ 3.	5.0/1022/ 5.	4.6/1022/ 5.
CO SAMPLE METER/RANGE/PPM	55.5/ 12/ 56.	45.1/ 12/ 45.	59.5/ 12/ 60.
CO BKGRD METER/RANGE/PPM	.0/ 12/ 0.	.1/ 12/ 0.	.0/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	97.7/ 14/ 1.0778	77.6/ 14/ .6197	92.8/ 14/ .9376
CO2 BKGRD METER/RANGE/PCT	12.0/ 14/ .0416	12.0/ 14/ .0416	11.9/ 14/ .0412
NOX SAMPLE METER/RANGE/PPM	92.5/ 1/ 23.1	36.2/ 1/ 9.1	69.1/ 1/ 17.3
NOX BKGRD METER/RANGE/PPM	.3/ 1/ .0	.3/ 1/ .0	.4/ 1/ .1
DILUTION FACTOR	12.11	21.01	13.90
THC CONCENTRATION PPM	8.	4.	7.
CO CONCENTRATION PPM	54.	44.	58.
CO2 CONCENTRATION PCT	1.0397	.5801	.8994
NOX CONCENTRATION PPM	23.0	9.0	17.2
FILTER WT. MG (EFFICIENCY, %)	.352 (96.)	.422 (96.)	.196 (94.)
THC MASS GRAMS	.44	.42	.38
CO MASS GRAMS	6.25	8.80	6.76
CO2 MASS GRAMS	1894.4	1816.5	1647.0
NOX MASS GRAMS	3.62	2.44	2.72
PARTICULATE MASS GRAMS	.15	.18	.09
THC GRAMS/MI	.12	.11	.11
CO GRAMS/MI	1.73	2.27	1.88
CO2 GRAMS/MI	525.2	468.6	457.3
NOX GRAMS/MI	1.00	.63	.76
FUEL ECONOMY IN MPG	18.40	19.46	20.57
RUN TIME SECONDS	504.	868.	505.
MEASURED DISTANCE MI	3.61	7.48	3.88
SCF, DRY	.981	.984	.986
DFC, WET (DRY)		.940 (.932)	.944 (.936)
TOT VOL (SCM) / SAM BLR (SCM)	270.6/ .00		271.4/ .00
COMPOSITE RESULTS			
TEST NUMBER			3-BAG (4-BAG)
BAROMETER MM HG 741.2		CARBON DIOXIDE G/MI	477.2 (474.6)
HUMIDITY G/KG 4.3		FUEL ECONOMY MPG	20.22 (20.32)
TEMPERATURE DEG C 22.2		HYDROCARBONS (THC) G/MI	.11 (.11)
		CARBON MONOXIDE G/MI	2.05 (2.07)
		OXIDES OF NITROGEN G/MI	.74 (.75)
		PARTICULATES G/MI	.041 (.038)

TABLE B-22. MERCEDES WITH REPLACEMENT TRAP AND LOW AROMATIC FUEL, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 13	RUN 2	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 3/ 4/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 1 / CVS NO. 17	DIESEL EM-752-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 19605. KM(12182. MILES)
BAROMETER 745.74 MM HG(29.36 IN HG)		DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)	
RELATIVE HUMIDITY 20. PCT		ABS. HUMIDITY 3.9 GM/KG	NOX HUMIDITY CORRECTION FACTOR .82
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	45.6 (114.0)	45.6 (114.0)	43.3 (110.0)
BLOWER REVOLUTIONS	4943.	8510.	4944.
TOT FLOW STD. CU. METRES(SCF)	99.1 (3499.)	170.6 (6024.)	99.8 (3524.)
THC SAMPLE METER/RANGE/PPM	10.6/22/ 11.	8.8/22/ 9.	10.8/22/ 11.
THC BCKGRD METER/RANGE/PPM	3.9/22/ 4.	5.6/22/ 6.	5.0/22/ 5.
CO SAMPLE METER/RANGE/PPM	54.2/13/ 51.	43.4/13/ 40.	60.3/13/ 57.
CO BCKGRD METER/RANGE/PPM	.2/13/ 0.	.1/13/ 0.	.0/13/ 0.
CO2 SAMPLE METER/RANGE/PCT	62.2/ 3/1.1067	37.8/ 3/ .6398	55.2/ 3/ .9680
CO2 BCKGRD METER/RANGE/PCT	2.6/ 3/ .0424	2.9/ 3/ .0473	3.4/ 3/ .0554
NOX SAMPLE METER/RANGE/PPM	97.3/ 1/ 24.3	39.9/ 1/ 10.0	71.0/ 1/ 17.8
NOX BCKGRD METER/RANGE/PPM	.2/ 1/ .0	.2/ 1/ .0	.1/ 1/ .0
DILUTION FACTOR	11.80	20.37	13.47
THC CONCENTRATION PPM	7.	4.	6.
CO CONCENTRATION PPM	50.	39.	56.
CO2 CONCENTRATION PCT	1.0679	.5948	.9167
NOX CONCENTRATION PPM	24.2	10.0	17.8
FILTER WT. MG (EFFICIENCY, %)	.364 (94.)	.456 (93.)	.315 (94.)
THC MASS GRAMS	.41	.35	.36
CO MASS GRAMS	5.71	7.82	6.50
CO2 MASS GRAMS	1937.6	1857.9	1675.1
NOX MASS GRAMS	3.75	2.66	2.77
PARTICULATE MASS GRAMS	.16	.21	.15
THC GRAMS/MI	.11	.09	.10
CO GRAMS/MI	1.58	2.01	1.80
CO2 GRAMS/MI	534.9	476.7	464.8
NOX GRAMS/MI	1.04	.68	.77
FUEL ECONOMY IN MPG	18.07	19.14	20.24
RUN TIME SECONDS	504.	868.	504.
MEASURED DISTANCE MI	3.62	7.52	3.90
SCF, DRY	.983	.986	.987
DFC, WET (DRY)	.938(.932)		.943(.937)
TOT VOL (SCM) / SAM BLR (SCM)	269.7/ .00		271.0/ .00
COMPOSITE RESULTS			
TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG 745.7		CARBON DIOXIDE G/MI	485.5 (480.6)
HUMIDITY G/KG 3.9		FUEL ECONOMY MPG	19.89 (20.09)
TEMPERATURE DEG C 24.4		HYDROCARBONS (THC) G/MI	.10 (.09)
		CARBON MONOXIDE G/MI	1.86 (1.77)
		OXIDES OF NITROGEN G/MI	.78 (.77)
		PARTICULATES G/MI	.049 (.044)

TABLE B-23. MERCEDES REGENERATION WITH REPLACEMENT TRAP AND LOW AROMATIC FUEL, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. R-1	RUN 1	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 3/ 9/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 2	DIESEL EM-752-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 19706. KM(12245. MILES)
		CVS NO. 17	
BAROMETER 743.20 MM HG(29.26 IN HG)		DRY BULB TEMP. 26.1 DEG C(79.0 DEG F)	
RELATIVE HUMIDITY 12. PCT		ABS. HUMIDITY 2.6 GM/KG	NOX HUMIDITY CORRECTION FACTOR .79
BAG RESULTS			
TEST CYCLE		HFET	
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)		46.1 (115.0)	
BLOWER REVOLUTIONS		7497.	
TOT FLOW STD. CU. METRES(SCF)		149.3 (5273.)	
THC SAMPLE METER/RANGE/PPM		18.0/22/ 18.	
THC BCKGRD METER/RANGE/PPM		3.9/22/ 4.	
CO SAMPLE METER/RANGE/PPM		46.0/13/ 108.	
CO BCKGRD METER/RANGE/PPM		.1/13/ 0.	
CO2 SAMPLE METER/RANGE/PCT		80.3/ 1/1.4845	
CO2 BCKGRD METER/RANGE/PCT		2.4/ 1/ .0423	
NOX SAMPLE METER/RANGE/PPM		94.6/ 1/ 23.6	
NOX BCKGRD METER/RANGE/PPM		1.1/ 1/ .3	
DILUTION FACTOR		8.77	
THC CONCENTRATION PPM		15.	
CO CONCENTRATION PPM		104.	
CO2 CONCENTRATION PCT		1.4470	
NOX CONCENTRATION PPM		23.3	
FILTER WT. MG (EFFICIENCY, %)		.668 (90.)	
THC MASS GRAMS		1.27	
CO MASS GRAMS		18.13	
CO2 MASS GRAMS		3956.5	
NOX MASS GRAMS		5.27	
PARTICULATE MASS GRAMS		.31	
RUN TIME SECONDS		765.	
DFC, WET (DRY)		.886 (.883)	
SCF, WET (DRY)		1.000 (.982)	
VOL (SCM)		149.3	
SAM BLR (SCM)		.00	
MI (MEASURED)		10.21	
TEST NUMBER,			
BAROMETER, MM HG		743.2	
HUMIDITY, G/KG		2.6	
TEMPERATURE, DEG C		26.1	
CARBON DIOXIDE, G/MI		387.4	
FUEL ECONOMY, MPG		24.9	
HYDROCARBONS, (THC) G/MI		.12	
CARBON MONOXIDE, G/MI		1.77	
OXIDES OF NITROGEN, G/MI		.52	
PARTICULATES, G/MI		.031	

**TABLE B-24. MERCEDES REGENERATION WITH REPLACEMENT TRAP AND
LOW AROMATIC FUEL, HFET**
SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	R-2	RUN	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL		DATE 3/11/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6			BAG CART NO. 2	DIESEL EM-752-F
TRANSMISSION A3			DYNO NO. 2	ODOMETER 19821. KM(12316. MILES)
			CVS NO. 17	
BAROMETER	735.58 MM HG(28.96 IN HG)		DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)	
RELATIVE HUMIDITY	36. PCT		ABS. HUMIDITY 8.4 GM/KG	NOX HUMIDITY CORRECTION FACTOR .93
BAG RESULTS				
TEST CYCLE			HFET	
BLOWER DIF P MM. H2O(IN. H2O)			1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)			1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)			43.3 (110.0)	
BLOWER REVOLUTIONS			7459.	
TOT FLOW STD. CU. METRES(SCF)			148.6 (5248.)	
THC SAMPLE METER/RANGE/PPM			16.3/22/ 16.	
THC BCKGRD METER/RANGE/PPM			4.2/22/ 4.	
CO SAMPLE METER/RANGE/PPM			66.6/13/ 158.	
CO BCKGRD METER/RANGE/PPM			.1/13/ 0.	
CO2 SAMPLE METER/RANGE/PCT			82.6/ 1/1.5284	
CO2 BCKGRD METER/RANGE/PCT			2.5/ 1/ .0441	
NOX SAMPLE METER/RANGE/PPM			94.0/ 1/ 23.5	
NOX BCKGRD METER/RANGE/PPM			.7/ 1/ .2	
DILUTION FACTOR			8.50	
THC CONCENTRATION PPM			13.	
CO CONCENTRATION PPM			151.	
CO2 CONCENTRATION PCT			1.4895	
NOX CONCENTRATION PPM			23.3	
FILTER WT. MG (EFFICIENCY, %)			.845 (93.)	
THC MASS GRAMS			1.09	
CO MASS GRAMS			26.16	
CO2 MASS GRAMS			4053.3	
NOX MASS GRAMS			6.16	
PARTICULATE MASS GRAMS			.39	
RUN TIME	SECONDS		765.	
DFC, WET (DRY)			.982 (.872)	
SCF, WET (DRY)			1.000 (.973)	
VOL (SCM)			148.6	
SAM BLR (SCM)			.00	
MI (MEASURED)			10.34	
TEST NUMBER,				
BAROMETER,	MM HG		735.6	
HUMIDITY,	G/KG		8.4	
TEMPERATURE,	DEG C		27.2	
CARBON DIOXIDE,	G/MI		391.9	
FUEL ECONOMY,	MPG		24.5	
HYDROCARBONS, (THC)	G/MI		.11	
CARBON MONOXIDE,	G/MI		2.53	
OXIDES OF NITROGEN,	G/MI		.60	
PARTICULATES,	G/MI		.037	

**TABLE B-25. MERCEDES REGENERATION WITH REPLACEMENT TRAP AND
LOW AROMATIC FUEL, HFET**

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	R-3	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL	DATE	3/15/88
ENGINE 3.0 L(183. CID) L-6		BAG CART NO.	2
TRANSMISSION A3		DYNO NO.	2
		CVS NO.	17
BAROMETER	744.73 MM HG(29.32 IN HG)	DRY BULB TEMP.	26.1 DEG C(79.0 DEG F)
RELATIVE HUMIDITY	15. PCT	ABS. HUMIDITY	3.2 GM/KG
BAG RESULTS		NOX HUMIDITY CORRECTION FACTOR	.80
TEST CYCLE		HFET	
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)		42.2 (108.0)	
BLOWER REVOLUTIONS		7492.	
TOT FLOW STD. CU. METRES(SCF)		151.4 (5345.)	
THC SAMPLE METER/RANGE/PPM		14.8/1022/ 15.	
THC BCKGRD METER/RANGE/PPM		5.4/1022/ 5.	
CO SAMPLE METER/RANGE/PPM		57.2/ 13/ 134.	
CO BCKGRD METER/RANGE/PPM		.2/ 13/ 0.	
CO2 SAMPLE METER/RANGE/PCT		81.6/ 1/1.5093	
CO2 BCKGRD METER/RANGE/PCT		2.8/ 1/ .0494	
NOX SAMPLE METER/RANGE/PPM		25.8/ 2/ 25.9	
NOX BCKGRD METER/RANGE/PPM		.2/ 2/ .2	
DILUTION FACTOR		8.62	
THC CONCENTRATION PPM		10.	
CO CONCENTRATION PPM		129.	
CO2 CONCENTRATION PCT		1.4656	
NOX CONCENTRATION PPM		25.7	
FILTER WT. MG (EFFICIENCY, %)		.545 (88.)	
THC MASS GRAMS		.98	
CO MASS GRAMS		22.74	
CO2 MASS GRAMS		4062.1	
NOX MASS GRAMS		5.96	
PARTICULATE MASS GRAMS		.27	
RUN TIME	SECONDS	765.	
DFC, WET (DRY)		.884 (.880)	
SCF, WET (DRY)		1.000 (.980)	
VOL (SCM)		151.4	
SAM BLR (SCM)		.00	
MI (MEASURED)		10.30	
TEST NUMBER,			
BAROMETER,	MM HG	744.7	
HUMIDITY,	G/KG	3.2	
TEMPERATURE,	DEG C	26.1	
CARBON DIOXIDE,	G/MI	394.2	
FUEL ECONOMY,	MPG	24.4	
HYDROCARBONS, (THC)	G/MI	.09	
CARBON MONOXIDE,	G/MI	2.21	
OXIDES OF NITROGEN,	G/MI	.58	
PARTICULATES,	G/MI	.026	

TABLE B-26. MERCEDES BASELINE WITH REPLACEMENT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO. 11	RUN 3	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 3/17/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 1	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 20006. KM(12431. MILES)
		CVS NO. 17	
BAROMETER 741.17 MM HG(29.18 IN HG)		DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)	
RELATIVE HUMIDITY 59. PCT		ABS. HUMIDITY 11.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.02
BAG RESULTS			
BAG NUMBER		1	2
DESCRIPTION		COLD TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	43.3 (110.0)	42.2 (108.0)
BLOWER REVOLUTIONS	4948.	8542.	4947.
TOT FLOW STD. CU. METRES(SCF)	99.4 (3508.)	171.0 (6039.)	99.3 (3507.)
THC SAMPLE METER/RANGE/PPM	16.5/1022/ 16.	15.6/1022/ 16.	16.2/1022/ 16.
THC BCKGRD METER/RANGE/PPM	5.0/1022/ 5.	5.0/1022/ 5.	4.7/1022/ 5.
CO SAMPLE METER/RANGE/PPM	72.4/ 13/ 70.	76.4/ 13/ 75.	51.2/ 12/ 107.
CO BCKGRD METER/RANGE/PPM	1.6/ 13/ 1.	1.2/ 13/ 1.	.4/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	62.4/ 3/1.1107	37.2/ 3/ .6289	55.6/ 3/ .9759
CO2 BCKGRD METER/RANGE/PCT	2.8/ 3/ .0456	2.9/ 3/ .0473	3.3/ 3/ .0538
NOX SAMPLE METER/RANGE/PPM	85.2/ 1/ 21.3	34.1/ 1/ 8.6	64.5/ 1/ 16.2
NOX BCKGRD METER/RANGE/PPM	.8/ 1/ .2	.8/ 1/ .2	.5/ 1/ .1
DILUTION FACTOR	12.08	21.20	13.69
THC CONCENTRATION PPM	12.	11.	12.
CO CONCENTRATION PPM	66.	72.	102.
CO2 CONCENTRATION PCT	1.0688	.5839	.9260
NOX CONCENTRATION PPM	21.2	8.4	16.1
FILTER WT. MG (EFFICIENCY, %)	.205 (86.)	.155 (87.)	.231 (89.)
THC MASS GRAMS	.68	1.07	.68
CO MASS GRAMS	7.67	14.25	11.81
CO2 MASS GRAMS	1944.4	1828.0	1684.0
NOX MASS GRAMS	4.08	2.79	3.10
PARTICULATE MASS GRAMS	.10	.08	.11
THC GRAMS/MI	.19	.28	.19
CO GRAMS/MI	2.12	3.68	3.28
CO2 GRAMS/MI	535.9	471.9	467.0
NOX GRAMS/MI	1.12	.72	.86
FUEL ECONOMY IN MPG	18.83	21.24	21.50
RUN TIME SECONDS	505.	872.	505.
MEASURED DISTANCE MI	3.63	3.87	3.61
SCF, DRY	.971	.975	.972
COMPOSITE RESULTS			
TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG 741.2		CARBON DIOXIDE G/MI	483.9 (.0)
HUMIDITY G/KG 11.2		FUEL ECONOMY MPG	20.76 (.00)
TEMPERATURE DEG C 23.9		HYDROCARBONS (THC) G/MI	.23 (.00)
		CARBON MONOXIDE G/MI	3.24 (.00)
		OXIDES OF NITROGEN G/MI	.84 (.00)
		PARTICULATES G/MI	.025 (.000)

TABLE B-27. MERCEDES WITH WORN INJECTORS, AND REPLACEMENT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO. 15	RUN 1	VEHICLE NO.	TEST WEIGHT 1928. KG (4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 3/22/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 2 / CVS NO. 17	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 20168. KM(12532. MILES)
BAROMETER 744.22 MM HG(29.30 IN HG)		DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)	
RELATIVE HUMIDITY 49. PCT		ABS. HUMIDITY 9.9 GM/KG	NOX HUMIDITY CORRECTION FACTOR .97
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.1 (106.0)	42.2 (108.0)	43.3 (110.0)
BLOWER REVOLUTIONS	4946.	8509.	4944.
TOT FLOW STD. CU. METRES(SCF)	100.1 (3535.)	171.8 (6066.)	39.5 (3514.)
THC SAMPLE METER/RANGE/PPM	16.5/1022/ 17.	15.0/1022/ 15.	15.6/1022/ 16.
THC BCKGRD METER/RANGE/PPM	6.3/1022/ 6.	6.3/1022/ 6.	7.3/1022/ 7.
CO SAMPLE METER/RANGE/PPM	98.0/ 12/ 98.	77.1/ 12/ 77.	55.6/ 13/ 130.
CO BCKGRD METER/RANGE/PPM	.6/ 12/ 1.	.6/ 12/ 1.	.2/ 13/ 0.
CO2 SAMPLE METER/RANGE/PCT	64.8/ 1/ 1.1917	79.7/ 14/ .6559	95.8/ 14/ 1.0205
CO2 BCKGRD METER/RANGE/PCT	2.8/ 1/ .0494	14.1/ 14/ .0502	13.1/ 14/ .0460
NOX SAMPLE METER/RANGE/PPM	90.8/ 1/ 22.7	36.0/ 1/ 9.1	68.3/ 1/ 17.1
NOX BCKGRD METER/RANGE/PPM	1.0/ 1/ .3	.8/ 1/ .2	.4/ 1/ .1
DILUTION FACTOR	11.24	20.33	13.07
THC CONCENTRATION PPM	11.	9.	9.
CO CONCENTRATION PPM	94.	75.	125.
CO2 CONCENTRATION PCT	1.1467	.6082	.3780
NOX CONCENTRATION PPM	22.4	8.9	17.0
FILTER WT. MG (EFFICIENCY, %)	.373 (86.)	.200 (74.)	.392 (89.)
THC MASS GRAMS	.62	.30	.51
CO MASS GRAMS	10.92	14.92	14.49
CO2 MASS GRAMS	2101.7	1912.9	1782.0
NOX MASS GRAMS	4.19	2.84	3.16
PARTICULATE MASS GRAMS	.19	.12	.19
THC GRAMS/MI	.17	.23	.14
CO GRAMS/MI	3.02	3.85	4.01
CO2 GRAMS/MI	580.3	493.3	492.9
NOX GRAMS/MI	1.16	.73	.87
FUEL ECONOMY IN MPG	17.36	18.78	20.33
RUN TIME SECONDS	505.	868.	504.
MEASURED DISTANCE MI	3.62	7.50	3.88
SCF, DRY	.973	.976	.978
DFC, WET (DRY)	.936(.921)		.941(.926)
TOT VOL (SCM) / SAM BLR (SCM)	271.9/ .00		270.2/ .00

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG 744.2	CARBON DIOXIDE G/MI	511.3	(509.9)
HUMIDITY G/KG 9.9	FUEL ECONOMY MPG	19.64	(19.70)
TEMPERATURE DEG C 25.0	HYDROCARBONS (THC) G/MI	.19	(.18)
	CARBON MONOXIDE G/MI	3.72	(3.56)
	OXIDES OF NITROGEN G/MI	.86	(.86)
	PARTICULATES G/MI	.041	(.042)

TABLE B-28. MERCEDES WITH WORN INJECTORS AND REPLACEMENT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	15	RUN	1	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)		
VEHICLE MODEL	86 MERCEDES 300SDL			DATE	3/22/88	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)		
ENGINE	3.0 L(183. CID) L-6			BAG CART NO.	2	DIESEL	EM-619-F		
TRANSMISSION	A3			DYNO NO.	2	ODOMETER	20192. KM(12547. MILES)		
				CVS NO.	17				
BAROMETER 744.22 MM HG(29.30 IN HG)				DRY BULB TEMP. 26.1 DEG C(79.0 DEG F)					
RELATIVE HUMIDITY 50. PCT				ABS. HUMIDITY 10.9 GM/KG		NOX HUMIDITY CORRECTION FACTOR 1.01			
BAG RESULTS				TEST CYCLE					
				HFET					
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)								
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)								
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)								
BLOWER REVOLUTIONS	7506.								
TOT FLOW STD. CU. METRES(SCF)	151.3 (5344.)								
THC SAMPLE METER/RANGE/PPM	16.1/1022/ 16.								
THC BCKGRD METER/RANGE/PPM	6.4/1022/ 6.								
CO SAMPLE METER/RANGE/PPM	76.0/ 13/ 183.								
CO BCKGRD METER/RANGE/PPM	.2/ 13/ 0.								
CO2 SAMPLE METER/RANGE/PCT	83.9/ 1/1.5533								
CO2 BCKGRD METER/RANGE/PCT	2.0/ 1/ .0353								
NOX SAMPLE METER/RANGE/PPM	83.7/ 1/ 21.0								
NOX BCKGRD METER/RANGE/PPM	.7/ 1/ .2								
DILUTION FACTOR	8.60								
THC CONCENTRATION PPM	10.								
CO CONCENTRATION PPM	174.								
CO2 CONCENTRATION PCT	1.5221								
NOX CONCENTRATION PPM	20.8								
FILTER WT. MG (EFFICIENCY, %)	.516 (86.)								
THC MASS GRAMS	.91								
CO MASS GRAMS	30.64								
CO2 MASS GRAMS	4217.5								
NOX MASS GRAMS	6.05								
PARTICULATE MASS GRAMS	.27								
RUN TIME	SECONDS	766.							
DFC, WET (DRY)		.884 (.869)							
SCF, WET (DRY)		1.000 (.970)							
VOL (SCM)		151.3							
SAM BLR (SCM)		.00							
MI (MEASURED)		10.34							
TEST NUMBER,									
BAROMETER,	MM HG	744.2							
HUMIDITY,	G/KG	10.9							
TEMPERATURE,	DEG C	26.1							
CARBON DIOXIDE,	G/MI	407.9							
FUEL ECONOMY,	MPG	24.6							
HYDROCARBONS, (THC)	G/MI	.09							
CARBON MONOXIDE,	G/MI	2.96							
OXIDES OF NITROGEN,	G/MI	.59							
PARTICULATES,	G/MI	.026							

TABLE B-29. MERCEDES WITH WORN INJECTORS AND REPLACEMENT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	15	RUN	1	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL			DATE	3/22/88	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	20209. KM(12557. MILES)
				CVS NO.	17		
BAROMETER	743.97 MM HG(29.29 IN HG)			DRY BULB TEMP.	27.2 DEG C(81.0 DEG F)		
RELATIVE HUMIDITY	48. PCT			ABS. HUMIDITY	11.1 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.01
BAG RESULTS							
TEST CYCLE				NYCC			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				43.3 (110.0)			
BLOWER REVOLUTIONS				5868.			
TOT FLOW STD. CU. METRES(SCF)				118.1 (4169.)			
THC SAMPLE METER/RANGE/PPM				12.8/1022/ 13.			
THC BCKGRD METER/RANGE/PPM				6.3/1022/ 6.			
CO SAMPLE METER/RANGE/PPM				43.8/ 12/ 44.			
CO BCKGRD METER/RANGE/PPM				.7/ 12/ 1.			
CO2 SAMPLE METER/RANGE/PCT				65.9/ 14/.4489			
CO2 BCKGRD METER/RANGE/PCT				12.4/ 14/.0432			
NOX SAMPLE METER/RANGE/PPM				41.6/ 1/ 10.4			
NOX BCKGRD METER/RANGE/PPM				.7/ 1/ .2			
DILUTION FACTOR				29.75			
THC CONCENTRATION PPM				7.			
CO CONCENTRATION PPM				42.			
CO2 CONCENTRATION PCT				.4071			
NOX CONCENTRATION PPM				10.3			
FILTER WT. MG (EFFICIENCY, %)				.099 (63.)			
THC MASS GRAMS				.46			
CO MASS GRAMS				5.79			
CO2 MASS GRAMS				880.0			
NOX MASS GRAMS				2.35			
PARTICULATE MASS GRAMS				.07			
RUN TIME	SECONDS			599.			
DFC, WET (DRY)				.966 (.951)			
SCF, WET (DRY)				1.000 (.980)			
VOL (SCM)				118.1			
SAM BLR (SCM)				.00			
MI (MEASURED)				1.16			
TEST NUMBER,							
BAROMETER,	MM HG			744.0			
HUMIDITY,	G/KG			11.1			
TEMPERATURE,	DEG C			27.2			
CARBON DIOXIDE,	G/MI			755.4			
FUEL ECONOMY,	MPG			13.3			
HYDROCARBONS, (THC)	G/MI			.39			
CARBON MONOXIDE,	G/MI			4.97			
OXIDES OF NITROGEN,	G/MI			2.02			
PARTICULATES,	G/MI			.059			

TABLE B-30. MERCEDES BASELINE WITH REPLACEMENT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 11	RUN 4	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 3/29/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 2	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 20336. KM(12636. MILES)
		CVS NO. 17	
BAROMETER 740.92 MM HG(29.17 IN HG)		DRY BULB TEMP. 25.6 DEG C(78.0 DEG F)	
RELATIVE HUMIDITY 60. PCT		ABS. HUMIDITY 12.7 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.07
BAG RESULTS			
BAG NUMBER		1	2
DESCRIPTION		COLD TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1676.4 (66.0)	1676.4 (66.0)	1625.6 (64.0)
BLOWER INLET P MM. H2O(IN. H2O)	1714.5 (67.5)	1727.2 (68.0)	1676.4 (66.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	43.9 (111.0)	43.9 (111.0)
BLOWER REVOLUTIONS	4963.	8516.	4949.
TOT FLOW STD. CU. METRES(SCF)	100.9 (3562.)	172.2 (6081.)	101.0 (3566.)
THC SAMPLE METER/RANGE/PPM	21.0/1022/ 21.	16.5/1022/ 16.	15.7/1022/ 16.
THC BCKGRD METER/RANGE/PPM	4.5/1022/ 5.	4.5/1022/ 5.	4.1/1022/ 4.
CO SAMPLE METER/RANGE/PPM	79.5/ 12/ 80.	75.5/ 12/ 76.	92.1/ 12/ 92.
CO BCKGRD METER/RANGE/PPM	.0/ 12/ 0.	.1/ 12/ 0.	.0/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	97.3/ 14/ 1.0654	76.7/ 14/ .6047	93.6/ 14/ .9589
CO2 BCKGRD METER/RANGE/PCT	11.9/ 14/ .0412	11.7/ 14/ .0404	11.6/ 14/ .0400
NOX SAMPLE METER/RANGE/PPM	83.5/ 1/ 20.9	35.5/ 1/ 8.9	68.1/ 1/ 17.1
NOX BCKGRD METER/RANGE/PPM	1.5/ 1/ .4	.9/ 1/ .2	.8/ 1/ .2
DILUTION FACTOR	12.57	22.03	13.95
THC CONCENTRATION PPM	17.	12.	12.
CO CONCENTRATION PPM	77.	73.	89.
CO2 CONCENTRATION PCT	1.0275	.5662	.9218
NOX CONCENTRATION PPM	20.5	8.7	16.9
FILTER WT. MG (EFFICIENCY, %)	.276 (84.)	.082 (61.)	.219 (81.)
THC MASS GRAMS	.98	1.21	.70
CO MASS GRAMS	9.00	14.70	10.44
CO2 MASS GRAMS	1897.8	1785.1	1704.3
NOX MASS GRAMS	4.24	3.07	3.48
PARTICULATE MASS GRAMS	.14	.06	.12
THC GRAMS/MI	.27	.31	.19
CO GRAMS/MI	2.46	3.73	2.87
CO2 GRAMS/MI	518.1	452.6	467.9
NOX GRAMS/MI	1.16	.78	.96
FUEL ECONOMY IN MPG	19.44	22.13	21.49
RUN TIME SECONDS	506.	868.	505.
MEASURED DISTANCE MI	3.66	3.94	3.64
SCF, DRY	.971	.975	.972
COMPOSITE RESULTS			
TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG 740.9		CARBON DIOXIDE G/MI	470.3 (.0)
HUMIDITY G/KG 12.7		FUEL ECONOMY MPG	21.35 (.00)
TEMPERATURE DEG C 25.6		HYDROCARBONS (THC) G/MI	.27 (.00)
		CARBON MONOXIDE G/MI	3.23 (.00)
		OXIDES OF NITROGEN G/MI	.90 (.00)
		PARTICULATES G/MI	.025 (.000)

TABLE B-31. MERCEDES BASELINE WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO. 2	RUN 4	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 3/30/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 2	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 20366. KM(12655. MILES)
		CVS NO. 17	
BAROMETER 744.47 MM HG(29.31 IN HG)		DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)	
RELATIVE HUMIDITY 29. PCT		ABS. HUMIDITY 5.1 GM/KG	NOX HUMIDITY CORRECTION FACTOR .85
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	43.3 (110.0)	43.3 (110.0)
BLOWER REVOLUTIONS	4946.	8512.	4945.
TOT FLOW STD. CU. METRES(SCF)	99.8 (3524.)	171.4 (6053.)	99.6 (3517.)
THC SAMPLE METER/RANGE/PPM	21.5/1022/ 31.	13.2/1022/ 13.	14.3/1022/ 14.
THC BCKGRD METER/RANGE/PPM	4.1/1022/ 4.	4.1/1022/ 4.	3.7/1022/ 4.
CO SAMPLE METER/RANGE/PPM	34.7/ 12/ 35.	24.0/ 12/ 24.	27.6/ 12/ 28.
CO BCKGRD METER/RANGE/PPM	.0/ 12/ 0.	.7/ 12/ 1.	.6/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	95.4/ 14/ 1.0089	74.7/ 14/ .5727	89.6/ 14/ .8581
CO2 BCKGRD METER/RANGE/PCT	12.7/ 14/ .0444	12.3/ 14/ .0428	12.0/ 14/ .0416
NOX SAMPLE METER/RANGE/PPM	27.4/ 2/ 27.5	46.9/ 1/ 11.8	83.2/ 1/ 20.8
NOX BCKGRD METER/RANGE/PPM	.2/ 2/ .2	.1/ 1/ .0	.0/ 1/ .0
DILUTION FACTOR	13.33	23.45	15.68
THC CONCENTRATION PPM	18.	9.	11.
CO CONCENTRATION PPM	34.	23.	26.
CO2 CONCENTRATION PCT	.9679	.5318	.8192
NOX CONCENTRATION PPM	27.3	11.7	20.8
FILTER WT. MG (EFFICIENCY, %)	3.575 (99.)	3.361 (99.)	2.294 (98.)
THC MASS GRAMS	1.02	.91	.62
CO MASS GRAMS	3.93	4.59	3.07
CO2 MASS GRAMS	1768.5	1669.0	1493.6
NOX MASS GRAMS	4.40	3.25	3.35
PARTICULATE MASS GRAMS	1.66	1.47	1.00
THC GRAMS/MI	.28	.24	.17
CO GRAMS/MI	1.08	1.19	.85
CO2 GRAMS/MI	486.8	431.2	415.3
NOX GRAMS/MI	1.21	.84	.93
FUEL ECONOMY IN MPG	20.77	23.43	24.37
RUN TIME SECONDS	504.	868.	504.
MEASURED DISTANCE MI	3.63	3.87	3.60
SCF, DRY	.981	.985	.983

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG 744.5	CARBON DIOXIDE G/MI	438.4	(.0)
HUMIDITY G/KG 5.1	FUEL ECONOMY MPG	23.06	(.00)
TEMPERATURE DEG C 22.8	HYDROCARBONS (THC) G/MI	.23	(.00)
	CARBON MONOXIDE G/MI	1.07	(.00)
	OXIDES OF NITROGEN G/MI	.94	(.00)
	PARTICULATES G/MI	.368	(.000)

TABLE B-32. MERCEDES WITH RETARDED TIMING AND REPLACEMENT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	17	RUN 1	VEHICLE NO.		TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL		DATE	4/21/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6			BAG CART NO.	2 / CVS NO. 17	DIESEL EM-619-F
TRANSMISSION A3			DYNO NO.	2	ODOMETER 20667. KM(12842. MILES)
BAROMETER 736.60 MM HG(29.00 IN HG)			DRY BULB TEMP. 25.6 DEG C(78.0 DEG F)		
RELATIVE HUMIDITY 50. PCT			ABS. HUMIDITY 10.5 GM/KG		NOX HUMIDITY CORRECTION FACTOR .99
BAG RESULTS					
BAG NUMBER		1	2	3	4
DESCRIPTION		COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)		43.9 (111.0)	44.4 (112.0)	45.6 (114.0)	45.6 (114.0)
BLOWER REVOLUTIONS		4956.	8499.	4961.	8501.
TOT FLOW STD. CU. METRES(SCF)		98.2 (3469.)	168.2 (5938.)	97.8 (3455.)	167.6 (5919.)
THC SAMPLE METER/RANGE/PPM		30.6/1022/ 31.	29.3/1022/ 29.	29.6/1022/ 30.	26.8/1022/ 27.
THC BCKGRD METER/RANGE/PPM		7.9/1022/ 8.	7.9/1022/ 8.	9.3/1022/ 9.	9.3/1022/ 9.
CO SAMPLE METER/RANGE/PPM		73.6/ 12/ 74.	68.3/ 12/ 68.	45.1/ 13/ 104.	62.3/ 12/ 62.
CO BCKGRD METER/RANGE/PPM		.6/ 12/ 1.	.7/ 12/ 1.	.3/ 13/ 1.	.6/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT		97.5/ 14/ 1.0716	76.7/ 14/ .6047	92.9/ 14/ .9403	75.0/ 14/ .5774
CO2 BCKGRD METER/RANGE/PCT		13.5/ 14/ .0477	13.4/ 14/ .0473	13.7/ 14/ .0485	13.7/ 14/ .0485
NOX SAMPLE METER/RANGE/PPM		79.3/ 1/ 19.9	31.8/ 1/ 8.0	56.7/ 1/ 14.2	31.1/ 1/ 7.9
NOX BCKGRD METER/RANGE/PPM		.5/ 1/ .1	.4/ 1/ .1	.6/ 1/ .2	.6/ 1/ .2
DILUTION FACTOR		12.50	22.00	14.18	23.06
THC CONCENTRATION PPM		23.	22.	21.	18.
CO CONCENTRATION PPM		71.	66.	100.	60.
CO2 CONCENTRATION PCT		1.0278	.5596	.8952	.5310
NOX CONCENTRATION PPM		19.7	7.9	14.1	7.7
FILTER WT. MG (EFFICIENCY, %)		.643 (69.)	.537 (66.)	.400 (65.)	.405 (68.)
THC MASS GRAMS		1.32	2.12	1.18	1.73
CO MASS GRAMS		8.07	12.91	11.38	11.75
CO2 MASS GRAMS		1848.4	1723.0	1603.5	1629.9
NOX MASS GRAMS		3.69	2.53	2.61	2.45
PARTICULATE MASS GRAMS		.40	.35	.26	.26
THC GRAMS/MI		.37	.54	.33	.44
CO GRAMS/MI		2.23	3.31	3.17	3.01
CO2 GRAMS/MI		511.7	441.4	445.9	417.7
NOX GRAMS/MI		1.02	.65	.73	.63
FUEL ECONOMY IN MPG		19.69	21.13	22.49	23.25
RUN TIME SECONDS		506.	868.	506.	868.
MEASURED DISTANCE MI		3.61	7.52	3.60	3.90
SCF, DRY		.974	.977	.975	.979
DFC, WET (DRY)			.942(.927)		.947(.931)
TOT VOL (SCM) / SAM BLR (SCM)			266.4/ .00		265.5/ .00
COMPOSITE RESULTS					
TEST NUMBER					3-BAG (4-BAG)
BAROMETER MM HG	736.6		CARBON DIOXIDE	6/MI	457.2 (450.1)
HUMIDITY G/KG	10.5		FUEL-ECONOMY	MPG	21.94 (22.29)
TEMPERATURE DEG C	25.6		HYDROCARBONS (THC)	6/MI	.45 (.42)
			CARBON MONOXIDE	6/MI	3.05 (2.96)
			OXIDES OF NITROGEN	6/MI	.75 (.74)
			PARTICULATES	6/MI	.089 (.082)

TABLE B-33. MERCEDES WITH RETARDED TIMING AND REPLACEMENT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 17	RUN 1	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 4/21/87	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) -6		BAG CART NO. 2	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 20691. KM(12857. MILES)
		CVS NO. 17	
BAROMETER 736.60 MM HG(29.00 IN HG)		DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)	
RELATIVE HUMIDITY 42. PCT		ABS. HUMIDITY 9.8 GM/KG	NOX HUMIDITY CORRECTION FACTOR .97
BAG RESULTS			
TEST CYCLE		HFET	
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)		45.6 (114.0)	
BLOWER REVOLUTIONS		7496.	
TOT FLOW STD. CU. METRES(SCF)		147.8 (5219.)	
THC SAMPLE METER/RANGE/PPM		27.8/1022/ 28.	
THC BCKGRD METER/RANGE/PPM		10.2/1022/ 10.	
CO SAMPLE METER/RANGE/PPM		61.0/ 13/ 145.	
CO BCKGRD METER/RANGE/PPM		.2/ 13/ 1.	
CO2 SAMPLE METER/RANGE/PCT		78.3/ 1/1.4464	
CO2 BCKGRD METER/RANGE/PCT		2.8/ 1/ .0494	
NOX SAMPLE METER/RANGE/PPM		69.0/ 1/ 17.3	
NOX BCKGRD METER/RANGE/PPM		.6/ 1/ .2	
DILUTION FACTOR		9.24	
THC CONCENTRATION PPM		19.	
CO CONCENTRATION PPM		139.	
CO2 CONCENTRATION PCT		1.4024	
NOX CONCENTRATION PPM		17.2	
FILTER WT. MG (EFFICIENCY, %)		.233 (28.)	
THC MASS GRAMS		1.59	
CO MASS GRAMS		23.92	
CO2 MASS GRAMS		3795.1	
NOX MASS GRAMS		4.71	
PARTICULATE MASS GRAMS		.35	
RUN TIME SECONDS		765.	
DFC, WET (DRY)		.892 (.880)	
SCF, WET (DRY)		1.000 (.973)	
VOL (SCM)		147.8	
SAM BLR (SCM)		.00	
MI (MEASURED)		10.25	
TEST NUMBER,			
BAROMETER, MM HG		736.6	
HUMIDITY, G/KG		9.8	
TEMPERATURE, DEG C		27.2	
CARBON DIOXIDE, G/MI		370.1	
FUEL ECONOMY, MPG		27.2	
HYDROCARBONS, (THC) G/MI		.16	
CARBON MONOXIDE, G/MI		2.33	
OXIDES OF NITROGEN, G/MI		.46	
PARTICULATES, G/MI		.034	

TABLE B-34. MERCEDES WITH RETARDED TIMING, AND REPLACEMENT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	17	RUN	1	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL	DATE	4/21/88	BAG CART NO.	2	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID)	-6	DYNO NO.	2	DIESEL	EM-619-F	ODOMETER	20707. KM(12867. MILES)
TRANSMISSION A3		CVS NO.	17				
BAROMETER 736.60 MM HG(29.00 IN HG)				DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)			
RELATIVE HUMIDITY 42. PCT				ABS. HUMIDITY 9.8 GM/KG		NOX HUMIDITY CORRECTION FACTOR .97	
BAG RESULTS				NYCC			
TEST CYCLE							
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)					
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)					
BLOWER INLET TEMP. DEG. C(DEG. F)		46.1 (115.0)					
BLOWER REVOLUTIONS		5849.					
TOT FLOW STD. CU. METRES(SCF)		115.1 (4066.)					
THC SAMPLE METER/RANGE/PPM		19.1/1022/ 19.					
THC BCKGRD METER/RANGE/PPM		10.6/1022/ 11.					
CO SAMPLE METER/RANGE/PPM		39.0/ 12/ 39.					
CO BCKGRD METER/RANGE/PPM		.6/ 12/ 1.					
CO2 SAMPLE METER/RANGE/PCT		65.0/ 14/ .4375					
CO2 BCKGRD METER/RANGE/PCT		13.8/ 14/ .0489					
NOX SAMPLE METER/RANGE/PPM		36.5/ 1/ 9.2					
NOX BCKGRD METER/RANGE/PPM		1.1/ 1/ .3					
DILUTION FACTOR		30.50					
THC CONCENTRATION PPM		9.					
CO CONCENTRATION PPM		38.					
CO2 CONCENTRATION PCT		.3902					
NOX CONCENTRATION PPM		8.9					
FILTER WT. MG (EFFICIENCY, %)		.304 (65.)					
THC MASS GRAMS		.59					
CO MASS GRAMS		5.05					
CO2 MASS GRAMS		822.6					
NOX MASS GRAMS		1.90					
PARTICULATE MASS GRAMS		.21					
RUN TIME	SECONDS	597.					
DFC, WET (DRY)		.967 (.954)					
SCF, WET (DRY)		1.000 (.982)					
VOL (SCM)		115.1					
SAM BLR (SCM)		.00					
MI (MEASURED)		1.14					
TEST NUMBER,							
BAROMETER,	MM HG	736.6					
HUMIDITY,	G/KG	9.8					
TEMPERATURE,	DEG C	27.2					
CARBON DIOXIDE,	G/MI	723.4					
FUEL ECONOMY,	MPG	13.9					
HYDROCARBONS, (THC)	G/MI	.52					
CARBON MONOXIDE,	G/MI	4.44					
OXIDES OF NITROGEN,	G/MI	1.67					
PARTICULATES,	G/MI	.180					

TABLE B-35. MERCEDES WITH RETARDED TIMING AND REPLACEMENT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	17	RUN	2	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	B6 MERCEDES 300SDL	DATE	4/22/88			ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO.	2 / CVS NO.	17		DIESEL	EM-619-F
TRANSMISSION A3		DYNO NO.	2			ODOMETER	20720. KM(12875. MILES)
BAROMETER	734.57 MM HG(28.92 IN HG)	DRY BULB TEMP.	26.7 DEG C(80.0 DEG F)				
RELATIVE HUMIDITY	48. PCT	ABS. HUMIDITY	10.8 GM/KG			NOX HUMIDITY CORRECTION FACTOR	1.00
BAG RESULTS							
DESCRIPTION		1	2	3	4		
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)	46.7 (116.0)	46.1 (115.0)	46.7 (116.0)	46.7 (116.0)			
BLOWER REVOLUTIONS	4959.	8504.	4952.	8490.			
TOT FLOW STD. CU. METRES(SCF)	97.1 (3429.)	166.8 (5891.)	97.0 (3424.)	166.2 (5869.)			
THC SAMPLE METER/RANGE/PPM	34.3/1022/ 34.	28.2/1022/ 28.	28.7/1022/ 29.	28.0/1022/ 28.			
THC BCKGRD METER/RANGE/PPM	8.8/1022/ 9.	8.8/1022/ 9.	11.1/1022/ 11.	11.1/1022/ 11.			
CO SAMPLE METER/RANGE/PPM	86.1/ 12/ 86.	76.6/ 12/ 77.	50.0/ 13/ 116.	29.2/ 13/ 66.			
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 0.	.0/ 12/ 0.	.4/ 13/ 1.	.7/ 13/ 2.			
CO2 SAMPLE METER/RANGE/PCT	97.1/ 14/ 1.0593	75.5/ 14/ .5853	94.2/ 14/ .9752	77.0/ 14/ .6097			
CO2 BCKGRD METER/RANGE/PCT	13.6/ 14/ .0481	13.3/ 14/ .0468	13.1/ 14/ .0460	13.3/ 14/ .0468			
NOX SAMPLE METER/RANGE/PPM	76.9/ 1/ 19.3	30.5/ 1/ 7.7	58.8/ 1/ 14.7	32.5/ 1/ 8.2			
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .2	.6/ 1/ .2	.7/ 1/ .2	1.0/ 1/ .3			
DILUTION FACTOR	12.62	22.69	13.66	21.84			
THC CONCENTRATION PPM	26.	20.	18.	17.			
CO CONCENTRATION PPM	83.	75.	111.	63.			
CO2 CONCENTRATION PCT	1.0150	.5406	.9326	.5650			
NOX CONCENTRATION PPM	19.1	7.6	14.6	7.9			
FILTER WT. MG (EFFICIENCY, %)	.526 (70.)	.326 (65.)	.351 (63.)	.322 (63.)			
THC MASS GRAMS	1.47	1.91	1.03	1.67			
CO MASS GRAMS	9.37	14.53	12.57	12.18			
CO2 MASS GRAMS	1804.7	1651.1	1655.4	1719.3			
NOX MASS GRAMS	3.56	2.42	2.71	2.53			
PARTICULATE MASS GRAMS	.32	.22	.24	.22			
THC GRAMS/MI	.41	.49	.29	.43			
CO GRAMS/MI	2.61	3.74	3.50	3.14			
CO2 GRAMS/MI	501.7	424.9	460.7	442.9			
NOX GRAMS/MI	.99	.62	.75	.65			
FUEL ECONOMY IN MPG	20.05	21.71	23.51	21.77	22.21	22.63	
RUN TIME	SECONDS	506.	867.	506.	867.		
MEASURED DISTANCE	MI	3.60	7.48	3.89	7.48	3.88	
SCF, DRY		.975	.978	.979	.976	.978	.979
DFC, WET (DRY)		.943(.928)			.944(.930)		
TOT VOL (SCM) / SAM BLR (SCM)		263.9/ .00			263.2/ .00		

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER	MM HG 734.6	CARBON DIOXIDE	6/MI 450.6 (455.9)
HUMIDITY	G/KG 10.8	FUEL ECONOMY	MPG 22.23 (21.99)
TEMPERATURE	DEG C 26.7	HYDROCARBONS (THC)	6/MI .42 (.40)
		CARBON MONOXIDE	6/MI 3.44 (3.26)
		OXIDES OF NITROGEN	6/MI .73 (.74)
		PARTICULATES	6/MI .066 (.067)

TABLE B-36. MERCEDES WITH RETARDED TIMING AND REPLACEMENT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	17	RUN	2	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL	DATE	4/22/87			ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID)	-6	BAG CART NO.	2			DIESEL	EM-619-F
TRANSMISSION A3		DYNO NO.	2			ODOMETER	20744. KM(12890. MILES)
		CVS NO.	17				
BAROMETER	736.60 MM HG(29.00 IN HG)	DRY BULB TEMP.	27.2 DEG C(81.0 DEG F)				
RELATIVE HUMIDITY	42. PCT	ABS. HUMIDITY	9.8 GM/KG			NOX HUMIDITY CORRECTION FACTOR	.97
BAG RESULTS							
TEST CYCLE		HFET					
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)					
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)					
BLOWER INLET TEMP. DEG. C(DEG. F)		48.3 (119.0)					
BLOWER REVOLUTIONS		7492.					
TOT FLOW STD. CU. METRES(SCF)		146.5 (5171.)					
THC SAMPLE METER/RANGE/PPM		30.1/1022/ 30.					
THC BCKGRD METER/RANGE/PPM		13.0/1022/ 13.					
CO SAMPLE METER/RANGE/PPM		65.1/ 13/ 156.					
CO BCKGRD METER/RANGE/PPM		.9/ 13/ 2.					
CO2 SAMPLE METER/RANGE/PCT		78.4/ 1/1.4483					
CO2 BCKGRD METER/RANGE/PCT		2.8/ 1/ .0494					
NOX SAMPLE METER/RANGE/PPM		69.8/ 1/ 17.5					
NOX BCKGRD METER/RANGE/PPM		1.0/ 1/ .3					
DILUTION FACTOR		9.22					
THC CONCENTRATION PPM		18.					
CO CONCENTRATION PPM		148.					
CO2 CONCENTRATION PCT		1.4043					
NOX CONCENTRATION PPM		17.3					
FILTER WT. MG (EFFICIENCY, %)		.603 (69.)					
THC MASS GRAMS		1.56					
CO MASS GRAMS		25.18					
CO2 MASS GRAMS		3765.4					
NOX MASS GRAMS		4.69					
PARTICULATE MASS GRAMS		.38					
RUN TIME	SECONDS	765.					
DFC, WET (DRY)		.892 (.879)					
SCF, WET (DRY)		1.000 (.973)					
VOL (SCM)		146.5					
SAM BLR (SCM)		.00					
MI (MEASURED)		10.22					
TEST NUMBER,							
BAROMETER,	MM HG	736.6					
HUMIDITY,	G/KG	9.8					
TEMPERATURE,	DEG C	27.2					
CARBON DIOXIDE,	G/MI	368.5					
FUEL ECONOMY,	MPG	27.3					
HYDROCARBONS, (THC)	G/MI	.15					
CARBON MONOXIDE,	G/MI	2.46					
OXIDES OF NITROGEN,	G/MI	.46					
PARTICULATES,	G/MI	.037					

TABLE B-37. MERCEDES WITH RETARDED TIMING AND REPLACEMENT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 17	RUN 2	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 4/22/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) -6		BAG CART NO. 2	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 20761. KM(12900. MILES)
		CVS NO. 17	
BAROMETER 736.60 MM HG(29.00 IN HG)		DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)	
RELATIVE HUMIDITY 42. PCT		ABS. HUMIDITY 9.8 GM/KG	NOX HUMIDITY CORRECTION FACTOR .97
BAG RESULTS			
TEST CYCLE		NYCC	
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)		48.9 (120.0)	
BLOWER REVOLUTIONS		5847.	
TOT FLOW STD. CU. METRES(SCF)		114.1 (4029.)	
THC SAMPLE METER/RANGE/PPM		22.0/1022/ 22.	
THC BCKGRD METER/RANGE/PPM		11.7/1022/ 12.	
CO SAMPLE METER/RANGE/PPM		46.1/ 12/ 46.	
CO BCKGRD METER/RANGE/PPM		1.3/ 12/ 1.	
CO2 SAMPLE METER/RANGE/PCT		65.3/ 14/ .4413	
CO2 BCKGRD METER/RANGE/PCT		13.0/ 14/ .0456	
NOX SAMPLE METER/RANGE/PPM		36.0/ 1/ 9.1	
NOX BCKGRD METER/RANGE/PPM		.7/ 1/ .2	
DILUTION FACTOR		30.17	
THC CONCENTRATION PPM		11.	
CO CONCENTRATION PPM		44.	
CO2 CONCENTRATION PCT		.3972	
NOX CONCENTRATION PPM		8.9	
FILTER WT. MG (EFFICIENCY, %)		.413 (67.)	
THC MASS GRAMS		.70	
CO MASS GRAMS		5.83	
CO2 MASS GRAMS		829.7	
NOX MASS GRAMS		1.88	
PARTICULATE MASS GRAMS		.27	
RUN TIME SECONDS		597.	
DFC, WET (DRY)		.967 (.954)	
SCF, WET (DRY)		1.000 (.982)	
VOL (SCM)		114.1	
SAM BLR (SCM)		.00	
MI (MEASURED)		1.15	
TEST NUMBER,			
BAROMETER, MM HG		736.6	
HUMIDITY, G/KG		9.8	
TEMPERATURE, DEG C		27.2	
CARBON DIOXIDE, G/MI		721.3	
FUEL ECONOMY, MPG		13.9	
HYDROCARBONS, (THC) G/MI		.61	
CARBON MONOXIDE, G/MI		5.07	
OXIDES OF NITROGEN, G/MI		1.64	
PARTICULATES, G/MI		.232	

TABLE B-38. MERCEDES WITH RETARDED TIMING AND WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	8	RUN	1	VEHICLE NO.		TEST WEIGHT	1928. KG (4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL	DATE	4/27/88			ACTUAL ROAD LOAD	7.9 KW (10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO.	2 / CVS NO. 17			DIESEL	EM-619-F
TRANSMISSION A3		DYNO NO.	2			ODOMETER	20868. KM (12967. MILES)
BAROMETER	743.20 MM HG (29.26 IN HG)	DRY BULB TEMP.	25.6 DEG C (78.0 DEG F)				
RELATIVE HUMIDITY	34. PCT	ABS. HUMIDITY	7.0 GM/KG			NOX HUMIDITY CORRECTION FACTOR	.89
BAG RESULTS							
BAG NUMBER		1	2	3	4		
DESCRIPTION		COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED		
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)	48.9 (120.0)	47.8 (118.0)	48.9 (120.0)	47.2 (117.0)			
BLOWER REVOLUTIONS	4921.	8502.	4916.	8524.			
TOT FLOW STD. CU. METRES(SCF)	97.1 (3427.)	168.5 (5951.)	96.9 (3423.)	169.3 (5978.)			
THC SAMPLE METER/RANGE/PPM	29.6/1022/ 30.	23.0/1022/ 23.	24.8/1022/ 25.	22.0/1022/ 22.			
THC BCKGRD METER/RANGE/PPM	6.1/1022/ 6.	6.1/1022/ 6.	6.9/1022/ 7.	6.9/1022/ 7.			
CO SAMPLE METER/RANGE/PPM	37.1/ 12/ 37.	29.9/ 12/ 30.	32.6/ 12/ 33.	23.7/ 12/ 24.			
CO BCKGRD METER/RANGE/PPM	.1/ 12/ 0.	.1/ 12/ 0.	.1/ 12/ 0.	.1/ 12/ 0.			
CO2 SAMPLE METER/RANGE/PCT	94.9/ 14/ .9947	74.7/ 14/ .5727	91.9/ 14/ .9144	72.6/ 14/ .5408			
CO2 BCKGRD METER/RANGE/PCT	12.7/ 14/ .0444	12.6/ 14/ .0440	12.6/ 14/ .0440	12.7/ 14/ .0444			
NOX SAMPLE METER/RANGE/PPM	96.3/ 1/ 24.0	40.0/ 1/ 10.1	76.8/ 1/ 19.2	37.7/ 1/ 9.5			
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .2	.6/ 1/ .2	.6/ 1/ .2	.6/ 1/ .2			
DILUTION FACTOR	13.50	23.39	14.69	24.79			
THC CONCENTRATION PPM	24.	17.	18.	15.			
CO CONCENTRATION PPM	36.	29.	32.	23.			
CO2 CONCENTRATION PCT	.9536	.5306	.8734	.4982			
NOX CONCENTRATION PPM	23.9	9.9	19.1	9.3			
FILTER WT. MG (EFFICIENCY, %)	2.743 (95.)	2.753 (96.)	2.217 (95.)	2.399 (96.)			
THC MASS GRAMS	1.34	1.67	1.03	1.50			
CO MASS GRAMS	4.07	5.75	3.58	4.59			
CO2 MASS GRAMS	1694.5	1637.3	1550.0	1544.2			
NOX MASS GRAMS	3.95	2.84	3.16	2.69			
PARTICULATE MASS GRAMS	1.24	1.22	.99	1.06			
THC GRAMS/MI	.37	.42	.28	.38			
CO GRAMS/MI	1.12	1.46	.98	1.17			
CO2 GRAMS/MI	465.3	415.9	424.9	393.4			
NOX GRAMS/MI	1.08	.72	.87	.69			
FUEL ECONOMY IN MPG	21.71	22.95	24.23	23.79	24.71	25.64	
RUN TIME	SECONDS	506.	867.	507.	868.		
MEASURED DISTANCE	MI	3.64	7.58	3.94	3.65	7.57	3.93
SCF, DRY		.980	.983	.984	.981	.983	.984
DFC, WET (DRY)		.946 (.936)				.950 (.939)	
TOT VOL (SCM) / SAM BLR (SCM)		265.6/ .00				266.2/ .00	
COMPOSITE RESULTS							
TEST NUMBER						3-BAG	(4-BAG)
BAROMETER	MM HG	743.2				CARBON DIOXIDE	6/MI
HUMIDITY	G/KG	7.0				FUEL ECONOMY	MPG
TEMPERATURE	DEG C	25.6				HYDROCARBONS (THC)	G/MI
						CARBON MONOXIDE	G/MI
						OXIDES OF NITROGEN	G/MI
						PARTICULATES	G/MI

TABLE B-39. MERCEDES WITH RETARDED TIMING AND WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	8	RUN	1	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL			DATE	4/27/88	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID)	-6			BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	20893. KM(12982. MILES)
BAROMETER	743.20 MM HG(29.26 IN HG)			CVS NO.	17		
RELATIVE HUMIDITY	29. PCT			DRY BULB TEMP.	26.7 DEG C(80.0 DEG F)		
BAG RESULTS				ABS. HUMIDITY	6.5 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.88
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				48.3 (119.0)			
BLOWER REVOLUTIONS				7509.			
TOT FLOW STD. CU. METRES(SCF)				148.6 (5247.)			
THC SAMPLE METER/RANGE/PPM				27.6/1022/ 28.			
THC BCKGRD METER/RANGE/PPM				7.7/1022/ 8.			
CO SAMPLE METER/RANGE/PPM				42.6/ 12/ 43.			
CO BCKGRD METER/RANGE/PPM				.1/ 12/ 0.			
CO2 SAMPLE METER/RANGE/PCT				70.3/ 1/1.2951			
CO2 BCKGRD METER/RANGE/PCT				2.7/ 1/ .0476			
NOX SAMPLE METER/RANGE/PPM				90.9/ 1/ 22.7			
NOX BCKGRD METER/RANGE/PPM				.5/ 1/ .1			
DILUTION FACTOR				10.38			
THC CONCENTRATION PPM				21.			
CO CONCENTRATION PPM				41.			
CO2 CONCENTRATION PCT				1.2521			
NOX CONCENTRATION PPM				22.6			
FILTER WT. MG (EFFICIENCY, %)				3.925 (97.)			
THC MASS GRAMS				1.77			
CO MASS GRAMS				7.12			
CO2 MASS GRAMS				3406.0			
NOX MASS GRAMS				5.65			
PARTICULATE MASS GRAMS				1.72			
RUN TIME	SECONDS			766.			
DFC, WET (DRY)				.904 (.895)			
SCF, WET (DRY)				1.000 (.979)			
VOL (SCM)				148.6			
SAM BLR (SCM)				.00			
MI (MEASURED)				10.32			
TEST NUMBER,							
BAROMETER,	MM HG			743.2			
HUMIDITY,	G/KG			6.5			
TEMPERATURE,	DEG C			26.7			
CARBON DIOXIDE,	G/MI			330.1			
FUEL ECONOMY,	MPG			30.6			
HYDROCARBONS, (THC)	G/MI			.17			
CARBON MONOXIDE,	G/MI			.69			
OXIDES OF NITROGEN,	G/MI			.55			
PARTICULATES,	G/MI			.167			

TABLE B-40. MERCEDES WITH RETARDED TIMING AND WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	8	RUN	1	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL			DATE	4/27/88	ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID)	-6			BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	20910. KM(12993. MILES)
BAROMETER	743.46 MM HG(29.27 IN HG)			CVS NO.	17		
RELATIVE HUMIDITY	29. PCT			DRY BULB TEMP.	26.7 DEG C(80.0 DEG F)		
BAG RESULTS				ABS. HUMIDITY	6.5 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.88
TEST CYCLE				NYCC			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				49.4 (121.0)			
BLOWER REVOLUTIONS				5859.			
TOT FLOW STD. CU. METRES(SCF)				115.6 (4080.)			
THC SAMPLE METER/RANGE/PPM				17.4/1022/ 17.			
THC BCKGRD METER/RANGE/PPM				7.5/1022/ 8.			
CO SAMPLE METER/RANGE/PPM				20.8/ 12/ 21.			
CO BCKGRD METER/RANGE/PPM				.1/ 12/ 0.			
CO2 SAMPLE METER/RANGE/PCT				64.4/ 14/ .4301			
CO2 BCKGRD METER/RANGE/PCT				12.8/ 14/ .0448			
NOX SAMPLE METER/RANGE/PPM				42.4/ 1/ 10.6			
NOX BCKGRD METER/RANGE/PPM				.6/ 1/ .2			
DILUTION FACTOR				31.15			
THC CONCENTRATION PPM				10.			
CO CONCENTRATION PPM				21.			
CO2 CONCENTRATION PCT				.3868			
NOX CONCENTRATION PPM				10.5			
FILTER WT. MG (EFFICIENCY, %)				1.326 (95.)			
THC MASS GRAMS				.68			
CO MASS GRAMS				2.76			
CO2 MASS GRAMS				818.2			
NOX MASS GRAMS				2.04			
PARTICULATE MASS GRAMS				.61			
RUN TIME	SECONDS			598.			
DFC, WET (DRY)				.968 (.959)			
SCF, WET (DRY)				1.000 (.987)			
VOL (SCM)				115.6			
SAM BLR (SCM)				.00			
MI (MEASURED)				1.16			
TEST NUMBER,							
BAROMETER,	MM HG			743.5			
HUMIDITY,	G/KG			6.5			
TEMPERATURE,	DEG C			26.7			
CARBON DIOXIDE,	G/MI			702.4			
FUEL ECONOMY,	MPG			14.4			
HYDROCARBONS, (THC)	G/MI			.58			
CARBON MONOXIDE,	G/MI			2.37			
OXIDES OF NITROGEN,	G/MI			1.75			
PARTICULATES,	G/MI			.522			

TABLE B-41. MERCEDES WITH RETARDED TIMING AND WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

FTP - VEHICLE EMISSIONS RESULTS -

PROJECT 08-1280-001

TEST NO. 8	RUN 2	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 4/28/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 2 / CVS NO. 17	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 20930. KM(13005. MILES)
BAROMETER 743.71 MM HG(29.28 IN HG)	DRY BULB TEMP. 26.7 DEG C(80.0 DEG F)		
RELATIVE HUMIDITY 44. PCT	ABS. HUMIDITY 9.9 GM/KG	NOX HUMIDITY CORRECTION FACTOR .97	
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	44.4 (112.0)	45.0 (113.0)	45.0 (113.0)
BLOWER REVOLUTIONS	4955.	8509.	4954.
TOT FLOW STD. CU. METRES(SCF)	99.3 (3507.)	170.3 (6012.)	99.1 (3500.)
THC SAMPLE METER/RANGE/PPM	34.9/1022/ 35.	25.8/1022/ 26.	25.8/1022/ 26.
THC BCKGRD METER/RANGE/PPM	6.5/1022/ 7.	6.5/1022/ 7.	8.2/1022/ 8.
CO SAMPLE METER/RANGE/PPM	42.0/ 12/ 42.	32.5/ 12/ 33.	33.4/ 12/ 34.
CO BCKGRD METER/RANGE/PPM	1.2/ 12/ 1.	1.2/ 12/ 1.	.7/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	97.0/ 14/ 1.0562	77.3/ 14/ .6147	90.9/ 14/ .8894
CO2 BCKGRD METER/RANGE/PCT	13.4/ 14/ .0473	13.5/ 14/ .0477	13.0/ 14/ .0456
NOX SAMPLE METER/RANGE/PPM	95.6/ 1/ 23.8	40.5/ 1/ 10.2	71.6/ 1/ 17.9
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .2	.8/ 1/ .2	.3/ 1/ .1
DILUTION FACTOR	12.71	21.79	15.10
THC CONCENTRATION PPM	29.	20.	18.
CO CONCENTRATION PPM	40.	31.	32.
CO2 CONCENTRATION PCT	1.0127	.5692	.8468
NOX CONCENTRATION PPM	23.7	10.0	17.9
FILTER WT. MG (EFFICIENCY, %)	3.886 (95.)	3.163 (95.)	2.407 (94.)
THC MASS GRAMS	1.66	1.93	1.04
CO MASS GRAMS	4.57	6.07	3.67
CO2 MASS GRAMS	1841.2	1774.1	1536.8
NOX MASS GRAMS	4.38	3.16	3.30
PARTICULATE MASS GRAMS	1.79	1.39	1.11
THC GRAMS/MI	.45	.49	.29
CO GRAMS/MI	1.25	1.54	1.01
CO2 GRAMS/MI	504.4	450.9	422.0
NOX GRAMS/MI	1.20	.80	.91
FUEL ECONOMY IN MPG	20.02	21.17	22.35
RUN TIME SECONDS	506.	868.	505.
MEASURED DISTANCE MI	3.65	7.59	3.93
SCF, DRY	.976	.979	.980
DFC, WET (DRY)		.942(. 929)	.949(. 936)
TOT VOL (SCM) / SAM BLR (SCM)	269.6/ .00		269.0/ .00

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG 743.7	CARBON DIOXIDE G/MI	454.0	(441.7)
HUMIDITY G/KG 9.9	FUEL ECONOMY MPG	22.22	(22.85)
TEMPERATURE DEG C 26.7	HYDROCARBONS (THC) G/MI	.43	(.40)
	CARBON MONOXIDE G/MI	1.34	(1.27)
	OXIDES OF NITROGEN G/MI	.91	(.90)
	PARTICULATES G/MI	.369	(.359)

TABLE B-42. MERCEDES WITH RETARDED TIMING AND WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

HFET - VEHICLE EMISSIONS RESULTS -

PROJECT 08-1280-001

TEST NO. 8 RUN 2
 VEHICLE MODEL 86 MERCEDES 300SDL
 ENGINE 3.0 L(183. CID) -6
 TRANSMISSION A3

VEHICLE NO.
 DATE 4/28/88
 BAG CART NO. 2
 DYNOMO NO. 2
 CVS NO. 17

TEST WEIGHT 1928. KG(4250. LBS)
 ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
 DIESEL EM-619-F
 ODOMETER 20954. KM(13020. MILES)

BAROMETER 744.22 MM HG(29.30 IN HG)
 RELATIVE HUMIDITY 51. PCT
 BAG RESULTS

DRY BULB TEMP. 26.7 DEG C(80.0 DEG F)
 ABS. HUMIDITY 11.4 GM/KG

NOX HUMIDITY CORRECTION FACTOR 1.02

TEST CYCLE

HFET

BLOWER DIF P MM. H ₂ O(IN. H ₂ O)	1778.0 (70.0)
BLOWER INLET P MM. H ₂ O(IN. H ₂ O)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	45.6 (114.0)
BLOWER REVOLUTIONS	7485.
TOT FLOW STD. CU. METRES(SCF)	149.6 (5282.)
THC SAMPLE METER/RANGE/PPM	31.0/1022/ 31.
THC BCKGRD METER/RANGE/PPM	8.8/1022/ 9.
CO SAMPLE METER/RANGE/PPM	48.6/ 12/ 49.
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 0.
CO ₂ SAMPLE METER/RANGE/PCT	74.6/ 1/1.3763
CO ₂ BCKGRD METER/RANGE/PCT	2.7/ 1/ .0476
NOX SAMPLE METER/RANGE/PPM	91.6/ 1/ 22.9
NOX BCKGRD METER/RANGE/PPM	.6/ 1/ .2
DILUTION FACTOR	9.77
THC CONCENTRATION PPM	23.
CO CONCENTRATION PPM	46.
CO ₂ CONCENTRATION PCT	1.3335
NOX CONCENTRATION PPM	22.7
FILTER WT. MG (EFFICIENCY, %)	4.535 (97.)
THC MASS GRAMS	1.99
CO MASS GRAMS	8.06
CO ₂ MASS GRAMS	3652.0
NOX MASS GRAMS	6.65
PARTICULATE MASS GRAMS	1.97
RUN TIME SECONDS	765.
DFC, WET (DRY)	.898 (.883)
SCF, WET (DRY)	1.000 (.971)
VOL (SCM)	149.6
SAM BLR (SCM)	.00
MI (MEASURED)	10.28

TEST NUMBER,

BAROMETER,	MM HG	744.2
HUMIDITY,	G/KG	11.4
TEMPERATURE,	DEG C	26.7
CARBON DIOXIDE,	G/MI	355.4
FUEL ECONOMY,	MPG	28.5
HYDROCARBONS, (THC)	G/MI	.19
CARBON MONOXIDE,	G/MI	.78
OXIDES OF NITROGEN,	G/MI	.65
PARTICULATES,	G/MI	.192

TABLE B-43. MERCEDES WITH RETARDED TIMING AND WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH

NYCC - VEHICLE EMISSIONS RESULTS -

PROJECT 08-1280-001

TEST NO. 8 RUN 2
VEHICLE MODEL 86 MERCEDES 300SDL
ENGINE 3.0 L(183. CID) -6
TRANSMISSION A3

VEHICLE NO.
DATE 4/28/88
BAG CART NO. 2
DYNO NO. 2
CVS NO. 17

TEST WEIGHT 1928. KG(4250. LBS)
ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
DIESEL EM-619-F
ODOMETER 20970. KM(13030. MILES)

BAROMETER 743.97 MM HG(29.29 IN HG)
RELATIVE HUMIDITY 45. PCT
BAG RESULTS

DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)
ABS. HUMIDITY 10.4 GM/KG

NOX HUMIDITY CORRECTION FACTOR .99

TEST CYCLE

NYCC

BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	46.1 (115.0)
BLOWER REVOLUTIONS	5855.
TOT FLOW STD. CU. METRES(SCF)	116.8 (4124.)
THC SAMPLE METER/RANGE/PPM	21.1/1022/ 21.
THC BCKGRD METER/RANGE/PPM	3.7/1022/ 9.
CO SAMPLE METER/RANGE/PPM	22.6/ 12/ 23.
CO BCKGRD METER/RANGE/PPM	3.3/ 12/ 3.
CO2 SAMPLE METER/RANGE/PCT	63.4/ 14/ .4180
CO2 BCKGRD METER/RANGE/PCT	13.7/ 14/ .0485
NOX SAMPLE METER/RANGE/PPM	39.6/ 1/ 10.0
NOX BCKGRD METER/RANGE/PPM	1.3/ 1/ .3
DILUTION FACTOR	32.01
THC CONCENTRATION PPM	13.
CO CONCENTRATION PPM	19.
CO2 CONCENTRATION PCT	.3710
NOX CONCENTRATION PPM	9.6
FILTER WT. MG (EFFICIENCY, %)	1.485 (92.)
THC MASS GRAMS	.86
CO MASS GRAMS	2.59
CO2 MASS GRAMS	793.2
NOX MASS GRAMS	2.13
PARTICULATE MASS GRAMS	.67
RUN TIME SECONDS	598.
DFC, WET (DRY)	.969 (.955)
SCF, WET (DRY)	1.000 (.982)
VOL (SCM)	116.8
SAM BLR (SCM)	.00
MI (MEASURED)	1.14

TEST NUMBER,

BAROMETER,	MM HG	744.0
HUMIDITY,	G/KG	10.4
TEMPERATURE,	DEG C	27.2
CARBON DIOXIDE,	G/MI	694.7
FUEL ECONOMY,	MPG	14.5
HYDROCARBONS, (THC)	G/MI	.75
CARBON MONOXIDE,	G/MI	2.27
OXIDES OF NITROGEN,	G/MI	1.86
PARTICULATES,	G/MI	.583

**TABLE B-44. MERCEDES WITH RETARDED TIMING, REPLACEMENT TRAP
AND LOW AROMATIC FUEL, FTP**

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	19	RUN	1	VEHICLE NO.		TEST WEIGHT	1928. KG(4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL	DATE	5/ 3/88			ACTUAL ROAD LOAD	7.9 KW(10.6 HP)
ENGINE	3.0 L(183. CID) L-6	BAG CART NO.	2 / CVS NO.	17	DIESEL	EM-752-F	
TRANSMISSION	A3	DYNO NO.	2		ODOMETER	21168. KM(13153. MILES)	
BAROMETER	742.44 MM HG(29.23 IN HG)	DRY BULB TEMP.	27.2 DEG C(81.0 DEG F)				
RELATIVE HUMIDITY	45. PCT	ABS. HUMIDITY	10.4 GM/KG		NOX HUMIDITY CORRECTION FACTOR	.99	
BAG RESULTS							
BAG NUMBER	1	2	3	4			
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED			
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	43.3 (110.0)	44.4 (112.0)	45.0 (113.0)			
BLOWER REVOLUTIONS	4993.	8508.	4960.	8503.			
TOT FLOW STD. CU. METRES(SCF)	100.4 (3544.)	170.7 (6029.)	99.2 (3503.)	169.7 (5993.)			
THC SAMPLE METER/RANGE/PPM	18.5/1022/ 19.	17.9/1022/ 18.	18.2/1022/ 18.	16.4/1022/ 16.			
THC BCKGRD METER/RANGE/PPM	6.5/1022/ 7.	6.5/1022/ 7.	7.1/1022/ 7.	7.1/1022/ 7.			
CO SAMPLE METER/RANGE/PPM	63.4/ 12/ 64.	70.7/ 12/ 71.	79.6/ 12/ 80.	62.7/ 12/ 63.			
CO BCKGRD METER/RANGE/PPM	.1/ 12/ 0.	.4/ 12/ 0.	.2/ 12/ 0.	.5/ 12/ 1.			
CO2 SAMPLE METER/RANGE/PCT	95.3/ 14/ 1.0061	75.4/ 14/ .5838	91.8/ 14/ .9119	74.2/ 14/ .5650			
CO2 BCKGRD METER/RANGE/PCT	11.6/ 14/ .0400	11.7/ 14/ .0404	11.8/ 14/ .0408	11.8/ 14/ .0408			
NOX SAMPLE METER/RANGE/PPM	75.7/ 1/ 19.0	30.7/ 1/ 7.8	60.2/ 1/ 15.1	31.7/ 1/ 8.0			
NOX BCKGRD METER/RANGE/PPM	.3/ 1/ .0	.3/ 1/ .0	.3/ 1/ .0	.2/ 1/ .0			
DILUTION FACTOR	12.95	22.17	14.25	22.93			
THC CONCENTRATION PPM	13.	12.	12.	10.			
CO CONCENTRATION PPM	61.	69.	77.	61.			
CO2 CONCENTRATION PCT	.9692	.5452	.8740	.5260			
NOX CONCENTRATION PPM	18.9	7.7	15.0	7.9			
FILTER WT. MG (EFFICIENCY, %)	.365 (62.)	.226 (55.)	.201 (61.)	.210 (60.)			
THC MASS GRAMS	.73	1.16	.67	.95			
CO MASS GRAMS	7.16	13.65	8.90	12.00			
CO2 MASS GRAMS	1780.8	1704.2	1587.3	1634.5			
NOX MASS GRAMS	3.59	2.48	2.82	2.56			
PARTICULATE MASS GRAMS	.25	.18	.14	.14			
THC GRAMS/MI	.20	.30	.19	.24			
CO GRAMS/MI	1.98	3.51	2.47	3.09			
CO2 GRAMS/MI	491.4	437.7	439.7	420.4			
NOX GRAMS/MI	.99	.64	.78	.66			
FUEL ECONOMY IN MPG	19.63	20.74	21.88	22.36	22.81		
RUN TIME	SECONDS	510.	868.	506.	868.		
MEASURED DISTANCE	MI	3.62	7.52	3.89	7.50	3.89	
SCF, DRY		.976	.978	.980	.977	.979	.980
DFC, WET (DRY)			.943(.929)		.947(.933)		
TOT VOL (SCM) / SAM BLR (SCM)			271.1/ .00		268.9/ .00		
COMPOSITE RESULTS							
TEST NUMBER						3-BAG	(4-BAG)
BAROMETER	MM HG	742.4		CARBON DIOXIDE	6/MI	449.4	(444.3)
HUMIDITY	G/KG	10.4		FUEL ECONOMY	MPG	21.37	(21.63)
TEMPERATURE	DEG C	27.2		HYDROCARBONS (THC)	G/MI	.25	(.23)
				CARBON MONOXIDE	G/MI	2.90	(2.78)
				OXIDES OF NITROGEN	G/MI	.75	(.76)
				PARTICULATES	G/MI	.049	(.046)

**TABLE B-45. MERCEDES WITH RETARDED TIMING, WITHOUT TRAP, AND
WITH LOW AROMATIC FUEL, FTP**

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	10	RUN	1	VEHICLE NO.		TEST WEIGHT	1928. KG (4250. LBS)
VEHICLE MODEL	86 MERCEDES 300SDL	DATE	4/29/88			ACTUAL ROAD LOAD	7.9 KW (10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO.	2 / CVS NO.	17		DIESEL	EM-752-F
TRANSMISSION A3		DYNO NO.	2			ODOMETER	21052. KM (13081. MILES)
BAROMETER	740.41 MM HG (29.15 IN HG)	DRY BULB TEMP.	26.1 DEG C (79.0 DEG F)				
RELATIVE HUMIDITY	64. PCT	ABS. HUMIDITY	14.0 GM/KG			NOX HUMIDITY CORRECTION FACTOR	1.12
BAG RESULTS							
BAG NUMBER		1	2	3	4		
DESCRIPTION		COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED		
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	43.3 (110.0)	43.9 (111.0)	45.0 (113.0)			
BLOWER REVOLUTIONS	4960.	8510.	4957.	8501.			
TOT FLOW STD. CU. METRES(SCF)	99.3 (3507.)	170.1 (6008.)	98.9 (3493.)	169.1 (5971.)			
THC SAMPLE METER/RANGE/PPM	28.9/1022/ 29.	20.0/1022/ 20.	21.0/1022/ 21.	19.8/1022/ 20.			
THC BCKGRD METER/RANGE/PPM	10.1/1022/ 10.	10.1/1022/ 10.	9.2/1022/ 9.	9.2/1022/ 9.			
CO SAMPLE METER/RANGE/PPM	37.8/ 12/ 38.	26.8/ 12/ 27.	29.3/ 12/ 29.	23.6/ 12/ 24.			
CO BCKGRD METER/RANGE/PPM	1.1/ 12/ 1.	1.0/ 12/ 1.	1.2/ 12/ 1.	.8/ 12/ 1.			
CO2 SAMPLE METER/RANGE/PCT	94.8/ 14/ .9919	74.4/ 14/ .5681	89.1/ 14/ .8464	72.8/ 14/ .5438			
CO2 BCKGRD METER/RANGE/PCT	13.6/ 14/ .0481	13.5/ 14/ .0477	13.6/ 14/ .0481	13.6/ 14/ .0481			
NOX SAMPLE METER/RANGE/PPM	81.9/ 1/ 20.5	34.9/ 1/ 8.8	65.0/ 1/ 16.3	35.2/ 1/ 8.9			
NOX BCKGRD METER/RANGE/PPM	.5/ 1/ .1	.4/ 1/ .1	.4/ 1/ .1	.5/ 1/ .1			
DILUTION FACTOR	13.15	22.93	15.43	23.96			
THC CONCENTRATION PPM	20.	10.	12.	11.			
CO CONCENTRATION PPM	35.	25.	27.	22.			
CO2 CONCENTRATION PCT	.9475	.5225	.8014	.4977			
NOX CONCENTRATION PPM	20.4	8.7	16.2	8.7			
FILTER WT. MG (EFFICIENCY, %)	2.500 (91.)	2.096 (92.)	1.756 (89.)	2.108 (91.)			
THC MASS GRAMS	1.13	1.02	.72	1.09			
CO MASS GRAMS	4.09	4.98	3.13	4.38			
CO2 MASS GRAMS	1722.9	1627.5	1451.4	1540.9			
NOX MASS GRAMS	4.35	3.17	3.44	3.17			
PARTICULATE MASS GRAMS	1.17	1.00	.86	1.02			
THC GRAMS/MI	.31	.26	.20	.28			
CO GRAMS/MI	1.13	1.28	.87	1.12			
CO2 GRAMS/MI	476.3	418.0	401.2	393.9			
NOX GRAMS/MI	1.20	.81	.95	.81			
FUEL ECONOMY IN MPG	20.29	21.65	23.10	24.11	24.32	24.51	
RUN TIME	SECONDS	506.	868.	506.		867.	
MEASURED DISTANCE	MI	3.62	7.51	3.89	3.62	7.53	3.91
SCF, DRY		.970	.972	.974	.971	.973	.974
DFC, WET (DRY)		.944(.925)			.950(.930)		
TOT VOL (SCM) / SAM BLR (SCM)		269.5/ .00			268.0/ .00		
COMPOSITE RESULTS							
TEST NUMBER						3-BAG	(4-BAG)
BAROMETER	MM HG	740.4				CARBON DIOXIDE	6/MI
HUMIDITY	G/KG	14.0				FUEL ECONOMY	MPG
TEMPERATURE	DEG C	26.1				HYDROCARBONS (THC)	6/MI
						CARBON MONOXIDE	6/MI
						OXIDES OF NITROGEN	6/MI
						PARTICULATES	6/MI

TABLE B-46. MERCEDES BASELINE WITH REPLACEMENT TRAP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO. 11	RUN 5	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)	
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 5/6/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)	
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 2	DIESEL EM-619-F	
TRANSMISSION A3		DYNO NO. 2	ODOMETER 21295. KM(13232. MILES)	
BAROMETER 742.44 MM HG(29.23 IN HG)		CVS NO. 17		
RELATIVE HUMIDITY 51. PCT		DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)		
BAG RESULTS		ABS. HUMIDITY 11.9 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.04	
BAG NUMBER				
DESCRIPTION		1 COLD TRANSIENT	2 STABILIZED	3 HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)	46.7 (116.0)	47.2 (117.0)	46.1 (115.0)	
BLOWER REVOLUTIONS	4966.	8502.	4964.	
TOT FLOW STD. CU. METRES(SCF)	98.7 (3484.)	168.6 (5952.)	98.8 (3487.)	
THC SAMPLE METER/RANGE/PPM	16.1/1022/ 16.	12.9/1022/ 13.	13.7/1022/ 14.	
THC BCKGRD METER/RANGE/PPM	5.4/1022/ 5.	5.4/1022/ 5.	5.5/1022/ 6.	
CO SAMPLE METER/RANGE/PPM	82.3/ 12/ 83.	83.7/ 12/ 84.	44.7/ 13/ 104.	
CO BCKGRD METER/RANGE/PPM	.6/ 12/ 1.	.1/ 12/ 0.	.3/ 13/ 1.	
CO2 SAMPLE METER/RANGE/PCT	99.3/ 14/1.1295	79.2/ 14/ .6471	95.1/ 14/1.0004	
CO2 BCKGRD METER/RANGE/PCT	12.1/ 14/ .0420	12.2/ 14/ .0424	12.8/ 14/ .0448	
NOX SAMPLE METER/RANGE/PPM	91.2/ 1/ 22.8	37.4/ 1/ 9.4	72.8/ 1/ 18.2	
NOX BCKGRD METER/RANGE/PPM	.1/ 1/ .0	.3/ 1/ .1	1.7/ 1/ .4	
DILUTION FACTOR	11.87	20.59	13.36	
THC CONCENTRATION PPM	11.	8.	9.	
CO CONCENTRATION PPM	79.	81.	100.	
CO2 CONCENTRATION PCT	1.0910	.6067	.9589	
NOX CONCENTRATION PPM	22.8	9.3	17.8	
FILTER WT. MG (EFFICIENCY, %)	.467 (68.)	.394 (65.)	.583 (79.)	
THC MASS GRAMS	.64	.75	.49	
CO MASS GRAMS	9.06	15.98	11.49	
CO2 MASS GRAMS	1970.7	1872.4	1733.7	
NOX MASS GRAMS	4.47	3.13	3.51	
PARTICULATE MASS GRAMS	.29	.26	.32	
THC GRAMS/MI	.18	.19	.14	
CO GRAMS/MI	2.50	4.09	3.18	
CO2 GRAMS/MI	544.6	479.2	479.7	
NOX GRAMS/MI	1.24	.80	.97	
FUEL ECONOMY IN MPG	18.52	20.91	20.96	
RUN TIME SECONDS	506.	868.	507.	
MEASURED DISTANCE MI	3.62	3.91	3.61	
SCF, DRY	.973	.978	.974	
COMPOSITE RESULTS				
TEST NUMBER			3-BAG	(4-BAG)
BAROMETER MM HG 742.4		CARBON DIOXIDE 6/MI	492.8	(.0)
HUMIDITY GM/KG 11.9		FUEL ECONOMY MPG	20.38	(.00)
TEMPERATURE DEG C 27.2		HYDROCARBONS (THC) 6/MI	.17	(.00)
		CARBON MONOXIDE 6/MI	3.51	(.00)
		OXIDES OF NITROGEN 6/MI	.94	(.00)
		PARTICULATES 6/MI	.075	(.000)

TABLE B-47. MERCEDES BASELINE WITHOUT TRAP
 SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 2	RUN 5	VEHICLE NO.	TEST WEIGHT 1928. KG(4250. LBS)
VEHICLE MODEL 86 MERCEDES 300SDL		DATE 5/10/88	ACTUAL ROAD LOAD 7.9 KW(10.6 HP)
ENGINE 3.0 L(183. CID) L-6		BAG CART NO. 2	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 21395. KM(13294. MILES)
		CVS NO. 17	
BAROMETER 742.95 MM HG(29.25 IN HG)		DRY BULB TEMP. 26.1 DEG C(79.0 DEG F)	
RELATIVE HUMIDITY 47. PCT		ABS. HUMIDITY 10.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR .98
BAG RESULTS			
BAG NUMBER		1	2
DESCRIPTION		COLD TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	44.4 (112.0)	45.0 (113.0)	45.0 (113.0)
BLOWER REVOLUTIONS	4945.	8498.	4958.
TOT FLOW STD. CU. METRES(SCF)	99.0 (3494.)	169.8 (5994.)	99.1 (3498.)
THC SAMPLE METER/RANGE/PPM	22.4/1022/ 22.	12.5/1022/ 13.	13.9/1022/ 14.
THC BCKGRD METER/RANGE/PPM	5.3/1022/ 5.	5.3/1022/ 5.	5.0/1022/ 5.
CO SAMPLE METER/RANGE/PPM	37.7/ 12/ 38.	23.1/ 12/ 23.	28.0/ 12/ 28.
CO BCKGRD METER/RANGE/PPM	.3/ 12/ 0.	.1/ 12/ 0.	.5/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT	97.6/ 14/ 1.0751	75.9/ 14/ .5887	91.2/ 14/ .8965
CO2 BCKGRD METER/RANGE/PCT	12.7/ 14/ .0426	12.7/ 14/ .0426	12.8/ 14/ .0430
NOX SAMPLE METER/RANGE/PPM	26.6/ 2/ 26.7	11.2/ 2/ 11.3	20.4/ 2/ 20.5
NOX BCKGRD METER/RANGE/PPM	.2/ 2/ .2	.3/ 2/ .3	.2/ 2/ .2
DILUTION FACTOR	12.51	22.83	15.01
THC CONCENTRATION PPM	18.	7.	9.
CO CONCENTRATION PPM	36.	23.	27.
CO2 CONCENTRATION PCT	1.0359	.5479	.8564
NOX CONCENTRATION PPM	26.5	11.0	20.3
FILTER WT. MG (EFFICIENCY, %)	3.371 (96.)	3.230 (97.)	2.581 (93.)
THC MASS GRAMS	1.00	.73	.53
CO MASS GRAMS	4.17	4.46	3.09
CO2 MASS GRAMS	1876.6	1703.0	1553.1
NOX MASS GRAMS	4.92	3.50	3.77
PARTICULATE MASS GRAMS	1.49	1.42	1.20
THC GRAMS/MI	.28	.19	.15
CO GRAMS/MI	1.15	1.14	.85
CO2 GRAMS/MI	518.1	435.7	429.7
NOX GRAMS/MI	1.36	.89	1.04
FUEL ECONOMY IN MPG	19.52	23.21	23.56
RUN TIME SECONDS	505.	868.	506.
MEASURED DISTANCE MI	3.62	3.91	3.61
SCF, DRY	.975	.980	.977
COMPOSITE RESULTS			
TEST NUMBER			3-BAG (4-BAG)
BAROMETER MM HG 743.0		CARBON DIOXIDE G/MI	451.1 (.0)
HUMIDITY G/KG 10.2		FUEL ECONOMY MPG	22.42 (.00)
TEMPERATURE DEG C 26.1		HYDROCARBONS (THC) G/MI	.19 (.00)
		CARBON MONOXIDE G/MI	1.06 (.00)
		OXIDES OF NITROGEN G/MI	1.03 (.00)
		PARTICULATES G/MI	.365 (.000)

APPENDIX C
COMPUTER PRINTOUTS FOR THE REGULATED EMISSIONS,
VOLKSWAGEN

Table

C-	<u>Test Date</u>	<u>Test No.</u>	<u>Trap</u>	<u>Fuel Aromatics</u>	<u>Test Condition</u>	<u>Test Cycle</u>
1	9/1/87	1-1	yes	Baseline	Baseline	FTP
2	9/1/87	1-1	yes	Baseline	Baseline	HFET
3	9/1/87	1-1	yes	Baseline	Baseline	NYCC
4	9/2/87	1-2	yes	Baseline	Baseline	FTP
5	9/2/87	1-2	yes	Baseline	Baseline	HFET
6	9/2/87	1-2	yes	Baseline	Baseline	NYCC
7	9/10/87	2-1	no	Baseline	Baseline	FTP
8	9/10/87	2-1	no	Baseline	Baseline	HFET
9	9/10/87	2-1	no	Baseline	Baseline	NYCC
10	9/11/87	2-2	no	Baseline	Baseline	FTP
11	9/11/87	2-2	no	Baseline	Baseline	HFET
12	9/11/87	2-2	no	Baseline	Baseline	NYCC
13	10/15/87	R-1	yes	Baseline	Regeneration	HFET
14	10/19/87	R-2	yes	Baseline	Regeneration	HFET
15	10/20/87	R-3	yes	Baseline	Regeneration	HFET
16	10/15/87	L-1	yes	Baseline	Loaded Trap	NYCC
17	11/20/87	1-3	yes	Baseline	Baseline	FTP
18	11/23/87	2-3	no	Baseline	Baseline	FTP
19	12/22/87	3-1	yes	Low	Baseline	FTP
20	12/23/87	3-2	yes	Low	Baseline	FTP
21	1/6/88	4-1	no	Low	Baseline	FTP
22	1/7/88	4-2	no	Low	Baseline	FTP
23	2/25/88	L-2	yes	Baseline	Loaded Trap	FTP
24	4/1/88	R-1	yes	Low	Regeneration	HFET
25	4/4/88	R-2	yes	Low	Regeneration	HFET
26	4/5/88	1-4	yes	Baseline	Baseline	FTP
27	4/6/88	2-4	no	Baseline	Baseline	FTP
28	4/11/88	5-3	yes	Baseline	Failed Injectors	FTP
29	4/7/88	5-1	yes	Baseline	Failed Injectors	HFET
30	4/7/88	5-1	yes	Baseline	Failed Injectors	NYCC
31	4/8/88	5-2	yes	Baseline	Failed Injectors	FTP
32	4/8/88	5-2	yes	Baseline	Failed Injectors	HFET
33	4/8/88	5-2	yes	Baseline	Failed Injectors	NYCC
34	4/12/88	6-1	no	Baseline	Failed Injectors	FTP
35	4/12/88	6-1	no	Baseline	Failed Injectors	HFET
36	4/12/88	6-1	no	Baseline	Failed Injectors	NYCC
37	4/13/88	6-2	no	Baseline	Failed Injectors	FTP
38	4/13/88	6-2	no	Baseline	Failed Injectors	HFET
39	4/13/88	6-2	no	Baseline	Failed Injectors	NYCC
40	4/19/88	1-5	yes	Baseline	Baseline	FTP
41	4/27/88	1-6	yes	Baseline	Baseline	FTP

APPENDIX C (CONT'D)

**COMPUTER PRINTOUTS FOR THE REGULATED EMISSIONS,
VOLKSWAGEN**

**Table
C-**

	<u>Test Date</u>	<u>Test No.</u>	<u>Trap</u>	<u>Fuel Aromatics</u>	<u>Test Condition</u>	<u>Test Cycle</u>
42	4/18/88	2-5	no	Baseline	Baseline	FTP
43	5/6/88	7-1	yes	Baseline	Retarded Timing	FTP
44	5/6/88	7-1	yes	Baseline	Retarded Timing	HFET
45	5/6/88	7-1	yes	Baseline	Retarded Timing	NYCC
46	5/9/88	7-2	yes	Baseline	Retarded Timing	FTP
47	5/9/88	7-2	yes	Baseline	Retarded Timing	HFET
48	5/9/88	7-2	yes	Baseline	Retarded Timing	NYCC
49	5/10/88	8-1	no	Baseline	Retarded Timing	FTP
50	5/10/88	8-1	no	Baseline	Retarded Timing	HFET
51	5/10/88	8-1	no	Baseline	Retarded Timing	NYCC
52	5/13/88	8-2	no	Baseline	Retarded Timing	FTP
53	5/13/88	8-2	no	Baseline	Retarded Timing	HFET
54	5/13/88	8-2	no	Baseline	Retarded Timing	NYCC
55	5/17/88	9-1	yes	Low	Retarded Timing	FTP
56	5/16/88	10-1	no	Low	Retarded Timing	FTP
57	5/18/88	1-7	yes	Baseline	Baseline	FTP
58	5/19/88	2-6	no	Baseline	Baseline	FTP

TABLE C-1. VOLKSWAGEN BASELINE WITH TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	1	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG (2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	9/ 1/87	ACTUAL ROAD LOAD	5.2 KW (7.0 HP)
ENGINE 1.6 L (98. CID) L-4				BAG CART NO.	1 / CVS NO.	17	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2		ODOMETER 20463. KM(12715. MILES)
BAROMETER	746.25 MM HG (29.38 IN HG)			DRY BULB TEMP.	24.4 DEG C (76.0 DEG F)		
RELATIVE HUMIDITY	63. PCT			ABS. HUMIDITY	12.3 GM/KG		NOX HUMIDITY CORRECTION FACTOR 1.05
BAG RESULTS							
BAG NUMBER				1	2	3	4
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)				1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)				1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				41.7 (107.0)	41.7 (107.0)	41.1 (106.0)	41.1 (106.0)
BLOWER REVOLUTIONS				4968.	8540.	4964.	8552.
TOT FLOW STD. CU. METRES(SCF)				110.6 (3904.)	190.1 (6712.)	110.6 (3906.)	190.6 (6730.)
THC SAMPLE METER/RANGE/PPM				27.7/12/ .28.	22.9/12/ .23.	24.3/12/ .24.	24.0/12/ .24.
THC BCKGRD METER/RANGE/PPM				6.5/12/ .7.	6.5/12/ .7.	7.0/12/ .7.	7.0/12/ .7.
CO SAMPLE METER/RANGE/PPM				38.5/13/ .35.	27.1/13/ .25.	33.3/13/ .30.	27.3/13/ .25.
CO BCKGRD METER/RANGE/PPM				.2/13/ .0.	.2/13/ .0.	.1/13/ .0.	.5/13/ .0.
CO2 SAMPLE METER/RANGE/PCT				68.7/11/ .5925	49.2/11/ .3769	62.6/11/ .5200	49.1/11/ .3759
CO2 BCKGRD METER/RANGE/PCT				7.3/11/ .0433	6.9/11/ .0409	7.1/11/ .0421	6.9/11/ .0409
NOX SAMPLE METER/RANGE/PPM				51.2/ 1/ 12.9	33.0/ 1/ 8.3	42.9/ 1/ 10.8	33.9/ 1/ 8.6
NOX BCKGRD METER/RANGE/PPM				.6/ 1/ .2	.6/ 1/ .2	1.0/ 1/ .3	.3/ 1/ .0
DILUTION FACTOR				22.58	35.42	25.73	35.50
THC CONCENTRATION PPM				21.	17.	18.	17.
CO CONCENTRATION PPM				34.	24.	29.	24.
CO2 CONCENTRATION PCT				.5510	.3372	.4796	.3362
NOX CONCENTRATION PPM				12.7	8.2	10.5	8.5
FILTER WT. MG (EFFICIENCY, %)				.159 (72.)	.473 (79.)	.145 (75.)	.381 (80.)
THC MASS GRAMS				1.37	1.82	1.12	1.89
CO MASS GRAMS				4.40	5.24	3.79	5.24
CO2 MASS GRAMS				1115.5	1173.5	971.3	1173.3
NOX MASS GRAMS				2.84	3.14	2.35	3.26
PARTICULATE MASS GRAMS				.11	.28	.09	.23
THC GRAMS/MI				.38	.47	.31	.49
CO GRAMS/MI				1.22	1.35	1.06	1.35
CO2 GRAMS/MI				310.3	302.3	270.9	302.8
NOX GRAMS/MI				.79	.81	.66	.84
FUEL ECONOMY IN MPG				32.44	32.84	33.23	37.16
RUN TIME	SECONDS			505.	867.	504.	868.
MEASURED DISTANCE	MI			3.59	7.48	3.88	3.59
SCF, DRY				.974	.976	.976	.975
DFC, WET (DRY)					.966 (.946)		.968 (.948)
TOT VOL (SCM) / SAM BLR (SCM)				300.6/ .00			301.2/ .00
COMPOSITE RESULTS							
TEST NUMBER	1	1				3-BAG	(4-BAG)
BAROMETER	MM HG	746.3				CARBON DIOXIDE	6/MI 295.4 (295.5)
HUMIDITY	G/KG	12.3				FUEL ECONOMY	MPG 34.04 (34.03)
TEMPERATURE	DEG C	24.4				HYDROCARBONS (THC)	6/MI .41 (.41)
						CARBON MONOXIDE	6/MI 1.24 (1.24)
						OXIDES OF NITROGEN	6/MI .76 (.77)
						PARTICULATES	6/MI .051 (.047)

TABLE C-2. VOLKSWAGEN BASELINE WITH TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	1	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG (2625. LBS)
VEHICLE MODEL	0 VW JETTA			DATE	9/ 1/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	20489. KM(12731. MILES)
				CVS NO.	17		
BAROMETER 746.25 MM HG(29.38 IN HG)				DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)			
RELATIVE HUMIDITY 59. PCT				ABS. HUMIDITY 11.6 GM/KG			
BAG RESULTS				NOX HUMIDITY CORRECTION FACTOR 1.03			
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)				1270.0 (50.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1270.0 (50.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				40.0 (104.0)			
BLOWER REVOLUTIONS				7543.			
TOT FLOW STD. CU. METRES(SCF)				168.5 (5951.)			
THC SAMPLE METER/RANGE/PPM				25.0/12/ 25.			
THC BCKGRD METER/RANGE/PPM				8.0/12/ 8.			
CO SAMPLE METER/RANGE/PPM				36.0/13/ 33.			
CO BCKGRD METER/RANGE/PPM				.6/13/ 1.			
CO2 SAMPLE METER/RANGE/PCT				76.7/11/ .6953			
CO2 BCKGRD METER/RANGE/PCT				7.1/11/ .0421			
NOX SAMPLE METER/RANGE/PPM				67.6/ 1/ 17.0			
NOX BCKGRD METER/RANGE/PPM				.7/ 1/ .2			
DILUTION FACTOR				19.29			
THC CONCENTRATION PPM				17.			
CO CONCENTRATION PPM				31.			
CO2 CONCENTRATION PCT				.6553			
NOX CONCENTRATION PPM				16.8			
FILTER WT. MG (EFFICIENCY, %)				.249 (69.)			
THC MASS GRAMS				1.69			
CO MASS GRAMS				6.17			
CO2 MASS GRAMS				2022.1			
NOX MASS GRAMS				5.57			
PARTICULATE MASS GRAMS				.17			
RUN TIME	SECONDS	766.					
DFC, WET (DRY)		.948 (.930)					
SCF, WET (DRY)		1.000 (.975)					
VOL (SCM)		168.5					
SAM BLR (SCM)		.00					
MI (MEASURED)		10.22					
TEST NUMBER,							
BAROMETER,	MM HG	746.3					
HUMIDITY,	G/KG	11.6					
TEMPERATURE,	DEG C	24.4					
CARBON DIOXIDE,	G/MI	197.9					
FUEL ECONOMY,	MPG	51.0					
HYDROCARBONS, (THC)	G/MI	.17					
CARBON MONOXIDE,	G/MI	.60					
OXIDES OF NITROGEN,	G/MI	.54					
PARTICULATES,	G/MI	.017					

TABLE C-3. VOLKSWAGEN BASELINE WITH TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	1	RUN	1	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0 VW JETTA	DATE	9/ 1/87	BAG CART NO.	1	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4		DYNO NO.	2	DIESEL	EM-719-F	ODOMETER 20505. KM(12741. MILES)
TRANSMISSION A3		CVS NO.	17			
BAROMETER 745.74 MM HG(29.36 IN HG)				DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)		
RELATIVE HUMIDITY 59. PCT				ABS. HUMIDITY 11.1 GM/KG		NOX HUMIDITY CORRECTION FACTOR 1.01
BAG RESULTS						
TEST CYCLE				NYCC		
BLOWER DIF P MM. H2O(IN. H2O)				1270.0 (50.0)		
BLOWER INLET P MM. H2O(IN. H2O)				1270.0 (50.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)				41.1 (106.0)		
BLOWER REVOLUTIONS				5909.		
TOT FLOW STD. CU. METRES(SCF)				131.6 (4646.)		
THC SAMPLE METER/RANGE/PPM				19.9/12/ 20.		
THC BCKGRD METER/RANGE/PPM				7.1/12/ 7.		
CO SAMPLE METER/RANGE/PPM				24.9/13/ 22.		
CO BCKGRD METER/RANGE/PPM				4.3/13/ 4.		
CO2 SAMPLE METER/RANGE/PCT				38.6/11/ .2775		
CO2 BCKGRD METER/RANGE/PCT				7.0/11/ .0415		
NOX SAMPLE METER/RANGE/PPM				24.7/ 1/ 6.3		
NOX BCKGRD METER/RANGE/PPM				.6/ 1/ .2		
DILUTION FACTOR				48.00		
THC CONCENTRATION PPM				13.		
CO CONCENTRATION PPM				18.		
CO2 CONCENTRATION PCT				.2368		
NOX CONCENTRATION PPM				6.1		
FILTER WT. MG (EFFICIENCY, %)				.125 (66.)		
THC MASS GRAMS				.98		
CO MASS GRAMS				2.80		
CO2 MASS GRAMS				570.5		
NOX MASS GRAMS				1.56		
PARTICULATE MASS GRAMS				.09		
RUN TIME	SECONDS			600.		
DFC, WET (DRY)				.979 (.961)		
SCF, WET (DRY)				1.000 (.979)		
VOL (SCM)				131.6		
SAM BLR (SCM)				.00		
MI (MEASURED)				1.17		
TEST NUMBER,						
BAROMETER,	MM HG			745.7		
HUMIDITY,	G/KG			11.1		
TEMPERATURE,	DEG C			23.9		
CARBON DIOXIDE,	G/MI			488.3		
FUEL ECONOMY,	MPG			20.5		
HYDROCARBONS, (THC) G/MI						
CARBON MONOXIDE,	G/MI			.84		
OXIDES OF NITROGEN,	G/MI			2.40		
PARTICULATES,	G/MI			1.33		
				.079		

TABLE C-4. VOLKSWAGEN BASELINE WITH TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	1	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG (2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	9/ 2/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1 / CVS NO.	17	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2		ODOMETER 20527. KM(12755. MILES)
BAROMETER 744.98 MM HG(29.33 IN HG)				DRY BULB TEMP. 22.2 DEG C(72.0 DEG F)			
RELATIVE HUMIDITY 69. PCT				ABS. HUMIDITY 11.8 GM/KG			NOX HUMIDITY CORRECTION FACTOR 1.04
BAG RESULTS							
DESCRIPTION				1	2	3	4
				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)				1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET P MM. H2O(IN. H2O)				1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)	1270.0 (50.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				41.7 (107.0)	40.0 (104.0)	42.2 (108.0)	39.4 (103.0)
BLOWER REVOLUTIONS				4972.	8546.	4968.	8546.
TOT FLOW STD. CU. METRES(SCF)				110.4 (3900.)	190.6 (6729.)	110.2 (3892.)	190.8 (6738.)
THC SAMPLE METER/RANGE/PPM				26.2/12/ 26.	21.6/12/ 22.	23.0/12/ 23.	23.7/12/ 24.
THC BCKGRD METER/RANGE/PPM				7.0/12/ 7.	7.0/12/ 7.	8.2/12/ 8.	8.2/12/ 8.
CO SAMPLE METER/RANGE/PPM				40.7/13/ 38.	30.1/13/ 27.	33.2/13/ 30.	27.0/13/ 24.
CO BCKGRD METER/RANGE/PPM				1.0/13/ 1.	.5/13/ 0.	.9/13/ 1.	.8/13/ 1.
CO2 SAMPLE METER/RANGE/PCT				68.9/11/ .5949	48.7/11/ .3720	63.8/11/ .5339	49.4/11/ .3789
CO2 BCKGRD METER/RANGE/PCT				7.4/11/ .0440	7.3/11/ .0433	7.6/11/ .0452	7.4/11/ .0440
NOX SAMPLE METER/RANGE/PPM				51.8/ 1/ 13.0	36.4/ 1/ 9.2	44.7/ 1/ 11.2	34.9/ 1/ 8.8
NOX BCKGRD METER/RANGE/PPM				.6/ 1/ .2	.4/ 1/ .1	1.0/ 1/ .3	1.1/ 1/ .3
DILUTION FACTOR				22.49	35.88	25.07	35.23
THC CONCENTRATION PPM				19.	15.	15.	16.
CO CONCENTRATION PPM				36.	26.	29.	23.
CO2 CONCENTRATION PCT				.5529	.3298	.4905	.3362
NOX CONCENTRATION PPM				12.9	9.1	11.0	8.5
FILTER WT. MG (EFFICIENCY, %)				.080 (67.)	.140 (71.)	.110 (73.)	.148 (69.)
THC MASS GRAMS				1.24	1.62	.96	1.73
CO MASS GRAMS				4.57	5.80	3.67	5.12
CO2 MASS GRAMS				1118.0	1150.9	989.7	1174.6
NOX MASS GRAMS				2.82	3.43	2.40	3.23
PARTICULATE MASS GRAMS				.06	.10	.07	.10
THC GRAMS/MI				.35	.42	.27	.45
CO GRAMS/MI				1.27	1.50	1.02	1.33
CO2 GRAMS/MI				311.4	298.0	276.4	305.9
NOX GRAMS/MI				.79	.89	.67	.84
FUEL ECONOMY IN MPG				32.32	33.02	33.70	36.46
RUN TIME SECONDS				505.	867.	504.	868.
MEASURED DISTANCE MI				3.59	7.45	3.86	3.84
SCF, DRY				.972	.974	.974	.974
DFC, WET (DRY)					.966 (.945)		.967 (.946)
TOT VOL (SCM) / SAM BLR (SCM)				301.0/ .00		301.0/ .00	

COMPOSITE RESULTS

TEST NUMBER	1		3-BAG	(4-BAG)
BAROMETER MM HG	745.0		294.9	(297.2)
HUMIDITY G/KG	11.8		34.10	(33.85)
TEMPERATURE DEG C	22.2		.36	(.37)
			CARBON MONOXIDE G/MI	1.32 (1.27)
			HYDROCARBONS (THC) G/MI	.81 (.79)
			OXIDES OF NITROGEN G/MI	.022 (.022)
			PARTICULATES G/MI	

TABLE C-5. VOLKSWAGEN BASELINE WITH TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	1	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	9/ 2/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	20553. KM(12771. MILES)
				CVS NO.	17		
BAROMETER	745.24	MM HG(29.34 IN HG)		DRY BULB TEMP.	23.9 DEG C(75.0 DEG F)		
RELATIVE HUMIDITY	55.	PCT		ABS. HUMIDITY	10.4 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.99
BAG RESULTS							
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)				1270.0 (50.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1270.0 (50.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				42.8 (109.0)			
BLOWER REVOLUTIONS				7546.			
TOT FLOW STD. CU. METRES(SCF)				167.3 (5906.)			
THC SAMPLE METER/RANGE/PPM				24.1/12/ 24.			
THC BCKGRD METER/RANGE/PPM				9.1/12/ 9.			
CO SAMPLE METER/RANGE/PPM				34.4/13/ 31.			
CO BCKGRD METER/RANGE/PPM				.6/13/ 1.			
CO2 SAMPLE METER/RANGE/PCT				77.1/11/ .7007			
CO2 BCKGRD METER/RANGE/PCT				7.8/11/ .0465			
NOX SAMPLE METER/RANGE/PPM				66.1/ 1/ 16.6			
NOX BCKGRD METER/RANGE/PPM				1.7/ 1/ .4			
DILUTION FACTOR				19.14			
THC CONCENTRATION PPM				15.			
CO CONCENTRATION PPM				30.			
CO2 CONCENTRATION PCT				.6566			
NOX CONCENTRATION PPM				16.2			
FILTER WT. MG (EFFICIENCY, %)				.170 (69.)			
THC MASS GRAMS				1.49			
CO MASS GRAMS				5.84			
CO2 MASS GRAMS				2010.6			
NOX MASS GRAMS				5.12			
PARTICULATE MASS GRAMS				.12			
RUN TIME		SECONDS		766.			
DFC, WET (DRY)				.948 (.931)			
SCF, WET (DRY)				1.000 (.976)			
VOL (SCM)				167.3			
SAM BLR (SCM)				.00			
MI (MEASURED)				10.20			
TEST NUMBER,							
BAROMETER,		MM HG		745.2			
HUMIDITY,		G/KG		10.4			
TEMPERATURE,		DEG C		23.9			
CARBON DIOXIDE,		G/MI		197.1			
FUEL ECONOMY,		MPG		51.2			
HYDROCARBONS, (THC)		G/MI		.15			
CARBON MONOXIDE,		G/MI		.57			
OXIDES OF NITROGEN,		G/MI		.50			
PARTICULATES,		G/MI		.011			

TABLE C-6. VOLKSWAGEN BASELINE WITH TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 09-1280-001

TEST NO.	1	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	9/ 2/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6'L(98. CID) L-4				BAG CART NO.	1	DIESEL	EM-719-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	20569. KM(12781. MILES)
				CVS NO.	17		
BAROMETER 745.24 MM HG(29.34 IN HG)				DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)			
RELATIVE HUMIDITY 55. PCT				ABS. HUMIDITY 10.4 GM/KG		NOX HUMIDITY CORRECTION FACTOR .99	
BAG RESULTS				NYCC			
TEST CYCLE				NYCC			
BLOWER DIF P MM. H2O(IN. H2O)				1270.0 (50.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1270.0 (50.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				38.3 (101.0)			
BLOWER REVOLUTIONS				5895.			
TOT FLOW STD. CU. METRES(SCF)				132.1 (4663.)			
THC SAMPLE METER/RANGE/PPM				20.9/12/ 21.			
THC BCKGRD METER/RANGE/PPM				10.9/12/ 11.			
CO SAMPLE METER/RANGE/PPM				21.3/13/ 19.			
CO BCKGRD METER/RANGE/PPM				.8/13/ 1.			
CO2 SAMPLE METER/RANGE/PCT				38.9/11/ .2801			
CO2 BCKGRD METER/RANGE/PCT				7.7/11/ .0458			
NOX SAMPLE METER/RANGE/PPM				26.5/ 1/ 6.7			
NOX BCKGRD METER/RANGE/PPM				2.0/ 1/ .5			
DILUTION FACTOR				47.58			
THC CONCENTRATION PPM				10.			
CO CONCENTRATION PPM				18.			
CO2 CONCENTRATION PCT				.2353			
NOX CONCENTRATION PPM				6.2			
FILTER WT. MG (EFFICIENCY, %)				.064 (65.)			
THC MASS GRAMS				.78			
CO MASS GRAMS				2.77			
CO2 MASS GRAMS				568.8			
NOX MASS GRAMS				1.55			
PARTICULATE MASS GRAMS				.05			
RUN TIME	SECONDS			598.			
DFC, WET (DRY)				.979 (.962)			
SCF, WET (DRY)				1.000 (.980)			
VOL (SCM)				132.1			
SAM BLR (SCM)				.00			
MI (MEASURED)				1.18			
TEST NUMBER,				1			
BAROMETER,	MM HG	745.2					
HUMIDITY,	G/KG	10.4					
TEMPERATURE,	DEG C	23.9					
CARBON DIOXIDE,	G/MI	481.0					
FUEL ECONOMY,	MPG	20.9					
HYDROCARBONS, (THC)	G/MI	.66					
CARBON MONOXIDE,	G/MI	2.34					
OXIDES OF NITROGEN,	G/MI	1.31					
PARTICULATES,	G/MI	.041					

TABLE C-7. VOLKSWAGEN BASELINE WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	2	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	9/10/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2 / CVS NO.	17	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2		ODOMETER 20608. KM(12805. MILES)
BAROMETER	740.92	MM HG(29.17 IN HG)		DRY BULB TEMP.	23.9 DEG C(75.0 DEG F)		
RELATIVE HUMIDITY	70.	PCT		ABS. HUMIDITY	13.4 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.10
BAG RESULTS							
BAG NUMBER				1	2	3	4
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				40.0 (104.0)	40.6 (105.0)	40.6 (105.0)	41.1 (106.0)
BLOWER REVOLUTIONS				4931.	8496.	4928.	8489.
TOT FLOW STD. CU. METRES(SCF)				99.4 (3511.)	171.1 (6043.)	99.2 (3504.)	170.7 (6029.)
THC SAMPLE METER/RANGE/PPM				32.0/12/ 32.	26.2/12/ 26.	27.1/12/ 27.	27.6/12/ 28.
THC BCKGRD METER/RANGE/PPM				7.0/12/ 7.	10.8/12/ 11.	9.5/12/ 10.	12.7/12/ 13.
CO SAMPLE METER/RANGE/PPM				36.7/12/ 37.	25.1/12/ 25.	27.2/12/ 27.	26.5/12/ 27.
CO BCKGRD METER/RANGE/PPM				1.1/12/ 1.	1.3/12/ 1.	1.4/12/ 1.	.9/12/ 1.
CO2 SAMPLE METER/RANGE/PCT				77.8/14/ .6230	60.5/14/ .3842	73.4/14/ .5528	61.4/14/ .3945
CO2 BCKGRD METER/RANGE/PCT				12.7/14/ .0444	12.2/14/ .0424	12.4/14/ .0432	12.2/14/ .0424
NOX SAMPLE METER/RANGE/PPM				54.4/ 1/ 13.6	37.2/ 1/ 9.4	52.9/ 1/ 13.3	40.5/ 1/ 10.2
NOX BCKGRD METER/RANGE/PPM				.9/ 1/ .2	.9/ 1/ .2	.9/ 1/ .2	1.1/ 1/ .3
DILUTION FACTOR				21.46	34.73	24.22	33.81
THC CONCENTRATION PPM				25.	16.	18.	15.
CO CONCENTRATION PPM				34.	23.	25.	25.
CO2 CONCENTRATION PCT				.5807	.3430	.5114	.3533
NOX CONCENTRATION PPM				13.4	9.1	13.0	9.9
FILTER WT. MG (EFFICIENCY, %)				1.665 (96.)	1.655 (95.)	1.260 (97.)	1.532 (96.)
THC MASS GRAMS				1.45	1.55	1.03	1.51
CO MASS GRAMS				3.99	4.63	2.90	4.97
CO2 MASS GRAMS				1057.1	1074.8	929.0	1104.5
NOX MASS GRAMS				2.80	3.28	2.71	3.54
PARTICULATE MASS GRAMS				.72	.73	.56	.69
THC GRAMS/MI				.40	.40	.29	.39
CO GRAMS/MI				1.11	1.20	.81	1.29
CO2 GRAMS/MI				295.1	278.5	259.1	286.5
NOX GRAMS/MI				.78	.85	.76	.92
FUEL ECONOMY IN MPG				34.09	35.10	36.09	35.09
RUN TIME		SECONDS		504.	868.	504.	868.
MEASURED DISTANCE		MI		3.58	7.44	3.86	3.86
SCF, DRY				.972	.973	.974	.974
DFC, WET (DRY)				.965 (.943)		.966 (.944)	
TOT VOL (SCM) / SAM BLR (SCM)				270.6/ .00		270.0/ .00	
COMPOSITE RESULTS							
TEST NUMBER						3-BAG	(4-BAG)
BAROMETER	MM HG	740.9				CARBON DIOXIDE	G/MI
HUMIDITY	G/KG	13.4				FUEL ECONOMY	MPG
TEMPERATURE	DEG C	23.9				HYDROCARBONS (THC)	G/MI
						CARBON MONOXIDE	G/MI
						OXIDES OF NITROGEN	G/MI
						PARTICULATES	G/MI

TABLE C-8. VOLKSWAGEN BASELINE WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	2	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	9/10/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	20633. KM(12821. MILES)
				CVS NO.	17		
BAROMETER 741.68 MM HG(29.20 IN HG)				DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)			
RELATIVE HUMIDITY 53. PCT				ABS. HUMIDITY 10.7 GM/KG			
BAG RESULTS				NOX HUMIDITY CORRECTION FACTOR 1.00			
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)					1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)					1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)					41.7 (107.0)		
BLOWER REVOLUTIONS					7416.		
TOT FLOW STD. CU. METRES(SCF)					148.9 (5258.)		
THC SAMPLE METER/RANGE/PPM					31.7/12/ 32.		
THC BCKGRD METER/RANGE/PPM					11.4/12/ 11.		
CO SAMPLE METER/RANGE/PPM					32.9/12/ 33.		
CO BCKGRD METER/RANGE/PPM					1.1/12/ 1.		
CO2 SAMPLE METER/RANGE/PCT					87.8/14/ .8168		
CO2 BCKGRD METER/RANGE/PCT					11.8/14/ .0408		
NOX SAMPLE METER/RANGE/PPM					83.4/ 1/ 20.9		
NOX BCKGRD METER/RANGE/PPM					1.0/ 1/ .3		
DILUTION FACTOR					16.42		
THC CONCENTRATION PPM					21.		
CO CONCENTRATION PPM					31.		
CO2 CONCENTRATION PCT					.7785		
NOX CONCENTRATION PPM					20.6		
FILTER WT. MG (EFFICIENCY, %)					2.418 (98.)		
THC MASS GRAMS					1.80		
CO MASS GRAMS					5.36		
CO2 MASS GRAMS					2122.5		
NOX MASS GRAMS					5.87		
PARTICULATE MASS GRAMS					1.07		
RUN TIME	SECONDS					765.	
DFC, WET (DRY)						.939 (.923)	
SCF, WET (DRY)						1.000 (.976)	
VOL (SCM)						148.9	
SAM BLR (SCM)						.00	
MI (MEASURED)						10.19	
TEST NUMBER,							
BAROMETER,	MM HG					741.7	
HUMIDITY,	G/KG					10.7	
TEMPERATURE,	DEG C					25.0	
CARBON DIOXIDE,	G/MI					208.3	
FUEL ECONOMY,	MPG					48.5	
HYDROCARBONS, (THC)	G/MI					.18	
CARBON MONOXIDE,	G/MI					.53	
OXIDES OF NITROGEN,	G/MI					.58	
PARTICULATES,	G/MI					.105	

TABLE C-9. VOLKSWAGEN BASELINE WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	2	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	9/10/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-719-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	20649. KM(12831. MILES)
CVS NO.				CVS NO.	17		
BAROMETER	740.92	MM HG(29.17 IN HG)		DRY BULB TEMP.	24.4 DEG C(76.0 DEG F)		
RELATIVE HUMIDITY	59.	PCT		ABS. HUMIDITY	11.7 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.03
BAG RESULTS							
TEST CYCLE				NYCC			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				40.6 (105.0)			
BLOWER REVOLUTIONS				5852.			
TOT FLOW STD. CU. METRES(SCF)				117.9 (4161.)			
THC SAMPLE METER/RANGE/PPM				25.2/12/ 25.			
THC BCKGRD METER/RANGE/PPM				11.4/12/ 11.			
CO SAMPLE METER/RANGE/PPM				20.2/12/ 20.			
CO BCKGRD METER/RANGE/PPM				.9/12/ 1.			
CO2 SAMPLE METER/RANGE/PCT				51.4/14/ .2909			
CO2 BCKGRD METER/RANGE/PCT				11.9/14/ .0412			
NOX SAMPLE METER/RANGE/PPM				29.0/ 1/ 7.3			
NOX BCKGRD METER/RANGE/PPM				1.1/ 1/ .3			
DILUTION FACTOR				45.77			
THC CONCENTRATION PPM				14.			
CO CONCENTRATION PPM				19.			
CO2 CONCENTRATION PCT				.2506			
NOX CONCENTRATION PPM				7.0			
FILTER WT. MG (EFFICIENCY, %)				.730 (95.)			
THC MASS GRAMS				.95			
CO MASS GRAMS				2.61			
CO2 MASS GRAMS				540.7			
NOX MASS GRAMS				1.64			
PARTICULATE MASS GRAMS				.34			
RUN TIME	SECONDS			598.			
DFC, WET (DRY)				.978 (.959)			
SCF, WET (DRY)				1.000 (.978)			
VOL (SCM)				117.9			
SAM BLR (SCM)				.00			
MI (MEASURED)				1.18			
TEST NUMBER,							
BAROMETER,	MM HG			740.9			
HUMIDITY,	G/KG			11.7			
TEMPERATURE,	DEG C			24.4			
CARBON DIOXIDE,	G/MI			459.9			
FUEL ECONOMY,	MPG			21.8			
HYDROCARBONS, (THC)	G/MI			.81			
CARBON MONOXIDE,	G/MI			2.22			
OXIDES OF NITROGEN,	G/MI			1.39			
PARTICULATES,	G/MI			.292			

TABLE C-10. VOLKSWAGEN BASELINE WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	2	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG (2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	9/11/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2 / CVS NO.	17	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2		ODOMETER 20738. KM(12886. MILES)
BAROMETER 755.65 MM HG(29.75 IN HG)				DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)			
RELATIVE HUMIDITY 66. PCT				ABS. HUMIDITY 12.4 GM/KG			NOX HUMIDITY CORRECTION FACTOR 1.06
BAG RESULTS							
BAG NUMBER				1	2	3	4
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				42.8 (109.0)	42.8 (109.0)	41.1 (106.0)	41.7 (107.0)
BLOWER REVOLUTIONS				4915.	8478.	4936.	8475.
TOT FLOW STD. CU. METRES(SCF)				101.0 (3567.)	174.3 (6156.)	101.9 (3598.)	174.7 (6169.)
THC SAMPLE METER/RANGE/PPM				34.9/12/ .35.	26.5/12/ .26.	26.6/12/ .27.	27.8/12/ .28.
THC BCKGRD METER/RANGE/PPM				8.8/12/ .9.	9.9/12/ .10.	11.0/12/ .11.	11.0/12/ .11.
CO SAMPLE METER/RANGE/PPM				40.2/12/ .40.	25.5/12/ .26.	27.2/12/ .27.	25.1/12/ .25.
CO BCKGRD METER/RANGE/PPM				1.2/12/ .1.	1.0/12/ .1.	.5/12/ .1.	.4/12/ .0.
CO2 SAMPLE METER/RANGE/PCT				79.9/14/ .6594	61.7/14/ .3979	73.4/14/ .5528	61.4/14/ .3945
CO2 BCKGRD METER/RANGE/PCT				12.9/14/ .0452	13.0/14/ .0456	13.0/14/ .0456	13.0/14/ .0456
NOX SAMPLE METER/RANGE/PPM				58.9/ 1/ 14.8	39.7/ 1/ 10.0	52.9/ 1/ 13.3	40.0/ 1/ 10.1
NOX BCKGRD METER/RANGE/PPM				.4/ 1/ .1	.4/ 1/ .1	.5/ 1/ .1	1.0/ 1/ .3
DILUTION FACTOR				20.27	33.54	24.22	33.82
THC CONCENTRATION PPM				26.	17.	16.	17.
CO CONCENTRATION PPM				38.	24.	26.	24.
CO2 CONCENTRATION PCT				.6165	.3537	.5090	.3502
NOX CONCENTRATION PPM				14.7	9.9	13.1	9.8
FILTER WT. MG (EFFICIENCY, %)				2.013 (97.)	1.612 (96.)	1.273 (97.)	1.500 (94.)
THC MASS GRAMS				1.54	1.70	.94	1.72
CO MASS GRAMS				4.44	4.86	3.08	4.91
CO2 MASS GRAMS				1140.1	1128.9	949.7	1120.1
NOX MASS GRAMS				2.99	3.48	2.70	3.46
PARTICULATE MASS GRAMS				.88	.72	.57	.71
THC GRAMS/MI				.43	.44	.26	.45
CO GRAMS/MI				1.24	1.26	.86	1.28
CO2 GRAMS/MI				317.5	292.4	265.3	291.0
NOX GRAMS/MI				.83	.90	.76	.90
FUEL ECONOMY IN MPG				31.69	33.02	34.37	34.53
RUN TIME SECONDS				504.	867.	505.	867.
MEASURED DISTANCE MI				3.59	7.45	3.86	3.85
SCF, DRY				.973	.974	.975	.975
DFC, WET (DRY)					.963(.942)		.966(.946)
TOT VOL (SCM) / SAM BLR (SCM)					275.4/ .00		276.6/ .00

COMPOSITE RESULTS			3-BAG	(4-BAG)
TEST NUMBER				
BAROMETER MM HG 755.6			CARBON DIOXIDE G/MI	290.2 (289.7)
HUMIDITY G/KG 12.4			FUEL ECONOMY MPG	34.67 (34.72)
TEMPERATURE DEG C 23.9			HYDROCARBONS (THC) G/MI	.39 (.39)
			CARBON MONOXIDE G/MI	1.15 (1.15)
			OXIDES OF NITROGEN G/MI	.85 (.85)
			PARTICULATES G/MI	.191 (.190)

TABLE C-11. VOLKSWAGEN BASELINE WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	2	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0 VW JETTA	DATE	9/11/87	BAG CART NO.	2	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4		DYNO NO.	2	DIESEL	EM-619-F	ODOMETER	20677. KM(12848. MILES)
TRANSMISSION A3		CVS NO.	17				
BAROMETER	741.17 MM HG(29.18 IN HG)	DRY BULB TEMP.	23.3 DEG C(74.0 DEG F)				
RELATIVE HUMIDITY	54. PCT	ABS. HUMIDITY	10.0 GM/KG				
BAG RESULTS						NOX HUMIDITY CORRECTION FACTOR	.98
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				41.1 (106.0)			
BLOWER REVOLUTIONS				7469.			
TOT FLOW STD. CU. METRES(SCF)				150.2 (5304.)			
THC SAMPLE METER/RANGE/PPM				29.5/12/ 29.			
THC BCKGRD METER/RANGE/PPM				10.0/12/ 10.			
CO SAMPLE METER/RANGE/PPM				29.7/12/ 30.			
CO BCKGRD METER/RANGE/PPM				1.0/12/ 1.			
CO2 SAMPLE METER/RANGE/PCT				86.2/14/ .7820			
CO2 BCKGRD METER/RANGE/PCT				13.0/14/ .0456			
NOX SAMPLE METER/RANGE/PPM				79.8/ 1/ 20.0			
NOX BCKGRD METER/RANGE/PPM				1.0/ 1/ .3			
DILUTION FACTOR				17.16			
THC CONCENTRATION PPM				20.			
CO CONCENTRATION PPM				28.			
CO2 CONCENTRATION PCT				.7390			
NOX CONCENTRATION PPM				19.7			
FILTER WT. MG (EFFICIENCY, %)				2.432 (97.)			
THC MASS GRAMS				1.74			
CO MASS GRAMS				4.88			
CO2 MASS GRAMS				2032.4			
NOX MASS GRAMS				5.54			
PARTICULATE MASS GRAMS				1.08			
RUN TIME	SECONDS			766.			
DFC, WET (DRY)				.942 (.925)			
SCF, WET (DRY)				1.000 (.975)			
VOL (SCM)				150.2			
SMI BLR (SCM)				.00			
MI (MEASURED)				10.18			
TEST NUMBER,							
BAROMETER,	MM HG			741.2			
HUMIDITY,	G/KG			10.0			
TEMPERATURE,	DEG C			23.3			
CARBON DIOXIDE,	G/MI			199.6			
FUEL ECONOMY,	MPG			50.6			
HYDROCARBONS, (THC)	G/MI			.17			
CARBON MONOXIDE,	G/MI			.48			
OXIDES OF NITROGEN,	G/MI			.54			
PARTICULATES,	G/MI			.106			

TABLE C-12. VOLKSWAGEN BASELINE WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	2	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)		
VEHICLE MODEL	0	VW JETTA		DATE	9/11/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)		
ENGINE 1.6 L (98. CID) L-4				BAG CART NO.	2	DIESEL	EM-719-F		
TRANSMISSION A3				DYNO NO.	2	ODOMETER	20695. KM(12859. MILES)		
				CVS NO.	17				
BAROMETER 740.92 MM HG(29.17 IN HG)				DRY BULB TEMP. 23.9 DEG C(75.0 DEG F)					
RELATIVE HUMIDITY 55. PCT				ABS. HUMIDITY 10.5 GM/KG		NOX HUMIDITY CORRECTION FACTOR .99			
BAG RESULTS				TEST CYCLE					
				NYCC					
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)								
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)								
BLOWER INLET TEMP. DEG. C(DEG. F)	41.1 (106.0)								
BLOWER REVOLUTIONS	5860.								
TOT FLOW STD. CU. METRES(SCF)	117.9 (4162.)								
THC SAMPLE METER/RANGE/PPM	23.8/12/ 24.								
THC BCKGRD METER/RANGE/PPM	12.8/12/ 13.								
CO SAMPLE METER/RANGE/PPM	19.4/12/ 20.								
CO BCKGRD METER/RANGE/PPM	.0/12/ 0.								
CO2 SAMPLE METER/RANGE/PCT	51.3/14/ .2899								
CO2 BCKGRD METER/RANGE/PCT	12.6/14/ .0440								
NOX SAMPLE METER/RANGE/PPM	27.4/ 1/ 6.9								
NOX BCKGRD METER/RANGE/PPM	.9/ 1/ .2								
DILUTION FACTOR	45.94								
THC CONCENTRATION PPM	11.								
CO CONCENTRATION PPM	19.								
CO2 CONCENTRATION PCT	.2469								
NOX CONCENTRATION PPM	6.7								
FILTER WT. MG (EFFICIENCY, %)	.737 (94.)								
THC MASS GRAMS	.77								
CO MASS GRAMS	2.63								
CO2 MASS GRAMS	532.8								
NOX MASS GRAMS	1.50								
PARTICULATE MASS GRAMS	.35								
RUN TIME	SECONDS	599.							
DFC, WET (DRY)		.978 (.961)							
SCF, WET (DRY)		1.000 (.980)							
VOL (SCM)		117.9							
SAM BLR (SCM)		.00							
MI (MEASURED)		1.19							
TEST NUMBER,									
BAROMETER,	MM HG	740.9							
HUMIDITY,	G/KG	10.5							
TEMPERATURE,	DEG C	23.9							
CARBON DIOXIDE,	G/MI	448.5							
FUEL ECONOMY,	MPG	22.4							
HYDROCARBONS, (THC)	G/MI	.65							
CARBON MONOXIDE,	G/MI	2.21							
OXIDES OF NITROGEN,	G/MI	1.26							
PARTICULATES,	G/MI	.295							

TABLE C-13. VOLKSWAGEN REGENERATION TEST, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	R-1	RUN	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0 VM JETTA		DATE	10/15/87	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4			BAG CART NO.	1	DIESEL EN-719-F
TRANSMISSION A3			DYNO NO.	2	ODOMETER 33698. KM(20939. MILES)
			CVS NO.	17	
BAROMETER 743.46 MM HG(29.27 IN HG)			DRY BULB TEMP.	22.8 DEG C(73.0 DEG F)	
RELATIVE HUMIDITY 46. PCT			ABS. HUMIDITY	8.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR .92
BAG RESULTS					
TEST CYCLE			HFET		
BLOWER DIF P MM. H2O(IN. H2O)			1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)			1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)			40.6 (105.0)		
BLOWER REVOLUTIONS			7497.		
TOT FLOW STD. CU. METRES(SCF)			151.7 (5356.)		
THC SAMPLE METER/RANGE/PPM			26.2/12/ 26.		
THC BCKGRD METER/RANGE/PPM			5.8/12/ 6.		
CO SAMPLE METER/RANGE/PPM			74.2/13/ 72.		
CO BCKGRD METER/RANGE/PPM			1.8/13/ 2.		
CO2 SAMPLE METER/RANGE/PCT			90.5/11/ .8972		
CO2 BCKGRD METER/RANGE/PCT			7.6/11/ .0452		
NOX SAMPLE METER/RANGE/PPM			76.1/ 1/ 19.1		
NOX BCKGRD METER/RANGE/PPM			.0/ 1/ .0		
DILUTION FACTOR			14.91		
THC CONCENTRATION PPM			21.		
CO CONCENTRATION PPM			69.		
CO2 CONCENTRATION PCT			.8551		
NOX CONCENTRATION PPM			19.1		
FILTER WT. MG (EFFICIENCY, %)			1.527 (88.)		
THC MASS GRAMS			1.82		
CO MASS GRAMS			12.12		
CO2 MASS GRAMS			2374.7		
NOX MASS GRAMS			5.12		
PARTICULATE MASS GRAMS			.75		
RUN TIME	SECONDS		766.		
DFC, WET (DRY)			.933 (.919)		
SCF, WET (DRY)			1.000 (.977)		
VOL (SCM)			151.7		
SIM BLR (SCM)			.00		
MI (MEASURED)			10.26		
TEST NUMBER,			1		
BAROMETER,	MM HG		743.5		
HUMIDITY,	G/KG		8.2		
TEMPERATURE,	DEG C		22.8		
CARBON DIOXIDE,	G/MI		231.4		
FUEL ECONOMY,	MPG		43.5		
HYDROCARBONS, (THC)	G/MI		.18		
CARBON MONOXIDE,	G/MI		1.18		
OXIDES OF NITROGEN,	G/MI		.50		
PARTICULATES,	G/MI		.073		

TABLE C-14. VOLKSWAGEN REGENERATION TEST, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	R-2	RUN	VEHICLE NO.	TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA	DATE 10/19/87	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4			BAG CART NO. 1	DIESEL EM-619-F
TRANSMISSION A3			DYNO NO. 3	ODOMETER 33811. KM(21009. MILES)
			CVS NO. 17	
BAROMETER 740.16 MM HG(29.14 IN HG)			DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)	
RELATIVE HUMIDITY 56. PCT			ABS. HUMIDITY 10.9 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.01
BAG RESULTS			HFET	
TEST CYCLE				
BLOWER DIF P MM. H2O(IN. H2O)			1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)			1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)			40.0 (104.0)	
BLOWER REVOLUTIONS			7428.	
TOT FLOW STD. CU. METRES(SCF)			149.4 (5275.)	
THC SAMPLE METER/RANGE/PPM			18.3/12/ 18.	
THC BCKGRD METER/RANGE/PPM			5.8/12/ 6.	
CO SAMPLE METER/RANGE/PPM			56.0/13/ 53.	
CO BCKGRD METER/RANGE/PPM			1.2/13/ 1.	
CO2 SAMPLE METER/RANGE/PCT			88.1/11/ .8596	
CO2 BCKGRD METER/RANGE/PCT			7.6/11/ .0452	
NOX SAMPLE METER/RANGE/PPM			70.2/ 1/ 17.6	
NOX BCKGRD METER/RANGE/PPM			1.0/ 1/ .3	
DILUTION FACTOR			15.60	
THC CONCENTRATION PPM			13.	
CO CONCENTRATION PPM			50.	
CO2 CONCENTRATION PCT			.8173	
NOX CONCENTRATION PPM			17.4	
THC MASS GRAMS			1.11	
CO MASS GRAMS			8.73	
CO2 MASS GRAMS			2235.2	
NOX MASS GRAMS			5.00	
RUN TIME	SECONDS		765.	
DFC, WET (DRY)			.936 (.919)	
SCF, WET (DRY)			1.000 (.974)	
VOL (SCM)			149.4	
SAM BLR (SCM)			.00	
MI (MEASURED)			10.19	
TEST NUMBER,			2	
BAROMETER,	MM HG		740.2	
HUMIDITY,	G/KG		10.9	
TEMPERATURE,	DEG C		24.4	
CARBON DIOXIDE,	G/MI		219.4	
FUEL ECONOMY,	MPG		46.0	
HYDROCARBONS, (THC)	G/MI		.11	
CARBON MONOXIDE,	G/MI		.86	
OXIDES OF NITROGEN,	G/MI		.49	

TABLE C-15. VOLKSWAGEN REGENERATION TEST, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	R-3	RUN	VEHICLE NO.	TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA	DATE 10/20/87	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4			BAG CART NO. 1	DIESEL EM-719-F
TRANSMISSION A3			DYNO NO. 2	ODOMETER 33890. KM(21058. MILES)
			CVS NO. 17	
BAROMETER 746.25 MM HG(29.38 IN HG)			DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)	
RELATIVE HUMIDITY 42. PCT			ABS. HUMIDITY 8.5 GM/KG	NOX HUMIDITY CORRECTION FACTOR .93
BAG RESULTS				
TEST CYCLE			HFET	
BLOWER DIF P MM. H2O(IN. H2O)			1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)			1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)			43.3 (110.0)	
BLOWER REVOLUTIONS			7484.	
TOT FLOW STD. CU. METRES(SCF)			151.1 (5337.)	
THC SAMPLE METER/RANGE/PPM			22.5/12/ 22.	
THC BCKGRD METER/RANGE/PPM			5.3/12/ 5.	
CO SAMPLE METER/RANGE/PPM			66.1/13/ 64.	
CO BCKGRD METER/RANGE/PPM			.2/13/ 0.	
CO2 SAMPLE METER/RANGE/PCT			89.8/11/ .8861	
CO2 BCKGRD METER/RANGE/PCT			7.4/11/ .0440	
NOX SAMPLE METER/RANGE/PPM			85.8/ 1/ 21.5	
NOX BCKGRD METER/RANGE/PPM			.4/ 1/ .1	
DILUTION FACTOR			15.11	
THC CONCENTRATION PPM			18.	
CO CONCENTRATION PPM			61.	
CO2 CONCENTRATION PCT			.8451	
NOX CONCENTRATION PPM			21.4	
FILTER WT. MG (EFFICIENCY, %)			.590 (84.)	
THC MASS GRAMS			1.53	
CO MASS GRAMS			10.82	
CO2 MASS GRAMS			2338.6	
NOX MASS GRAMS			5.77	
PARTICULATE MASS GRAMS			.31	
RUN TIME SECONDS			765.	
DFC, WET (DRY)			.934 (.921)	
SCF, WET (DRY)			1.000 (.978)	
VOL (SCM)			151.1	
SAM BLR (SCM)			.00	
MI (MEASURED)			10.20	
TEST NUMBER,				
BAROMETER,	MM HG		746.3	
HUMIDITY,	G/KG		8.5	
TEMPERATURE,	DEG C		25.0	
CARBON DIOXIDE,	G/MI		229.3	
FUEL ECONOMY,	MPG		43.9	
HYDROCARBONS, (THC)	G/MI		.15	
CARBON MONOXIDE,	G/MI		1.06	
OXIDES OF NITROGEN,	G/MI		.57	
PARTICULATES,	G/MI		.030	

TABLE C-16. VOLKSWAGEN LOADED TRAP TEST, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	L-1	RUN	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0 VW JETTA		DATE	10/15/87	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4			BAG CART NO.	1	DIESEL EM-619-F
TRANSMISSION A3			DYNO NO.	2	ODOMETER 33693. KM(20936. MILES)
			CVS NO.	17	
BAROMETER 744.22 MM HG(29.30 IN HG)			DRY BULB TEMP.	21.7 DEG C(71.0 DEG F)	
RELATIVE HUMIDITY 49. PCT			ABS. HUMIDITY	8.0 GM/KG	NOX HUMIDITY CORRECTION FACTOR .92
BAG RESULTS			NYCC		
TEST CYCLE			NYCC		
BLOWER DIF P MM. H2O(IN. H2O)			1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)			1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)			42.2 (108.0)		
BLOWER REVOLUTIONS			5874.		
TOT FLOW STD. CU. METRES(SCF)			118.6 (4188.)		
THC SAMPLE METER/RANGE/PPM			21.9/12/ 22.		
THC BCKGRD METER/RANGE/PPM			4.9/12/ 5.		
CO SAMPLE METER/RANGE/PPM			24.6/13/ 22.		
CO BCKGRD METER/RANGE/PPM			.1/13/ 0.		
CO2 SAMPLE METER/RANGE/PCT			43.7/11/ .3239		
CO2 BCKGRD METER/RANGE/PCT			7.2/11/ .0427		
NOX SAMPLE METER/RANGE/PPM			25.9/ 1/ 6.6		
NOX BCKGRD METER/RANGE/PPM			.1/ 1/ .0		
DILUTION FACTOR			41.18		
THC CONCENTRATION PPM			17.		
CO CONCENTRATION PPM			22.		
CO2 CONCENTRATION PCT			.2822		
NOX CONCENTRATION PPM			6.5		
FILTER WT. MG (EFFICIENCY, %)			.202 (69.)		
THC MASS GRAMS			1.17		
CO MASS GRAMS			2.99		
CO2 MASS GRAMS			612.8		
NOX MASS GRAMS			1.36		
PARTICULATE MASS GRAMS			.13		
RUN TIME SECONDS			599.		
DFC, WET (DRY)			.976 (.960)		
SCF, WET (DRY)			1.000 (.981)		
VOL (SCM)			118.6		
SAM BLR (SCM)			.00		
MI (MEASURED)			1.17		
TEST NUMBER,			1		
BAROMETER, MM HG			744.2		
HUMIDITY, G/KG			8.0		
TEMPERATURE, DEG C			21.7		
CARBON DIOXIDE, G/MI			524.0		
FUEL ECONOMY, MPG			19.1		
HYDROCARBONS, (THC) G/MI			1.00		
CARBON MONOXIDE, G/MI			2.55		
OXIDES OF NITROGEN, G/MI			1.16		
PARTICULATES, G/MI			.108		

TABLE C-17. VOLKSWAGEN BASELINE WITH TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	1	RUN	3	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0 VW JETTA	DATE	11/20/87	BAG CART NO.	1	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4		DYNO NO.	2	DIESEL	EM-719-F	ODOMETER	33959. KM(21101. MILES)
TRANSMISSION A3		CVS NO.	17				
BAROMETER 753.62 MM HG(29.67 IN HG)		DRY BULB TEMP.	23.9 DEG C(75.0 DEG F)				
RELATIVE HUMIDITY 25. PCT		ABS. HUMIDITY	4.6 GM/KG			NOX HUMIDITY CORRECTION FACTOR	.83
BAG RESULTS							
BAG NUMBER		1	2	3			
DESCRIPTION		COLD TRANSIENT	STABILIZED	HOT TRANSIENT			
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	1803.4 (71.0)	1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)		1803.4 (71.0)	1803.4 (71.0)	1803.4 (71.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)		40.0 (104.0)	40.6 (105.0)	39.4 (103.0)			
BLOWER REVOLUTIONS		4941.	8502.	4943.			
TOT FLOW STD. CU. METRES(SCF)		101.6 (3587.)	174.4 (6157.)	101.8 (3593.)			
THC SAMPLE METER/RANGE/PPM		26.6/12/ 27.	19.3/12/ 19.	20.8/12/ 21.			
THC BCKGRD METER/RANGE/PPM		6.0/12/ 6.	5.0/12/ 5.	5.8/12/ 6.			
CO SAMPLE METER/RANGE/PPM		38.8/13/ 36.	28.2/13/ 26.	31.8/13/ 29.			
CO BCKGRD METER/RANGE/PPM		1.6/13/ 1.	1.4/13/ 1.	1.1/13/ 1.			
CO2 SAMPLE METER/RANGE/PCT		73.6/11/ .6543	52.5/11/ .4103	66.9/11/ .5706			
CO2 BCKGRD METER/RANGE/PCT		8.1/11/ .0483	8.1/11/ .0483	8.2/11/ .0490			
NOX SAMPLE METER/RANGE/PPM		60.7/ 1/ 15.2	41.6/ 1/ 10.5	55.4/ 1/ 13.9			
NOX BCKGRD METER/RANGE/PPM		.6/ 1/ .2	.7/ 1/ .2	.9/ 1/ .2			
DILUTION FACTOR		20.47	32.59	23.49			
THC CONCENTRATION PPM		21.	14.	15.			
CO CONCENTRATION PPM		34.	24.	28.			
CO2 CONCENTRATION PCT		.6083	.3634	.5237			
NOX CONCENTRATION PPM		15.1	10.3	13.7			
FILTER WT. MG (EFFICIENCY, %)		.400 (99.)	.400 (81.)	.280 (71.)			
THC MASS GRAMS		1.22	1.46	.89			
CO MASS GRAMS		3.98	4.87	3.26			
CO2 MASS GRAMS		1131.5	1160.3	975.7			
NOX MASS GRAMS		2.44	2.85	2.22			
PARTICULATE MASS GRAMS		.18	.22	.18			
THC GRAMS/MI		.34	.38	.25			
CO GRAMS/MI		1.10	1.26	.91			
CO2 GRAMS/MI		313.3	300.0	271.2			
NOX GRAMS/MI		.68	.74	.62			
FUEL ECONOMY IN MPG		32.16	33.53	37.19			
RUN TIME	SECONDS	505.	868.	505.			
MEASURED DISTANCE	MI	3.61	3.87	3.60			
SCF, DRY		.986	.988	.987			
COMPOSITE RESULTS							
TEST NUMBER						3-BAG	(4-BAG)
BAROMETER	MM HG	753.6		CARBON DIOXIDE	G/MI	294.8	(.0)
HUMIDITY	G/KG	4.6		FUEL ECONOMY	MPG	34.15	(.00)
TEMPERATURE	DEG C	23.9		HYDROCARBONS (THC)	G/MI	.33	(.00)
				CARBON MONOXIDE	G/MI	1.13	(.00)
				OXIDES OF NITROGEN	G/MI	.69	(.00)
				PARTICULATES	G/MI	.054	(.000)

TABLE C-18. VOLKSWAGEN BASELINE WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	2	RUN	3	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	11/23/87	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1	DIESEL EM-719-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER 34010. KM(21133. MILES)
				CVS NO.	17	
BAROMETER 742.95 MM HG(29.25 IN HG)				DRY BULB TEMP. 21.1 DEG C(70.0 DEG F)		
RELATIVE HUMIDITY 86. PCT				ABS. HUMIDITY 13.8 GM/KG		NOX HUMIDITY CORRECTION FACTOR 1.11
BAG RESULTS						
BAG NUMBER				1	2	3
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)				1803.4 (71.0)	1803.4 (71.0)	1803.4 (71.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				41.1 (106.0)	41.7 (107.0)	41.1 (106.0)
BLOWER REVOLUTIONS				4946.	8484.	4935.
TOT FLOW STD. CU. METRES(SCF)				99.5 (3515.)	170.5 (6020.)	99.3 (3507.)
THC SAMPLE METER/RANGE/PPM				34.6/12/ 35.	24.7/12/ 25.	25.3/12/ 25.
THC BCKGRD METER/RANGE/PPM				5.8/12/ 6.	6.1/12/ 6.	5.0/12/ 5.
CO SAMPLE METER/RANGE/PPM				36.2/13/ 33.	28.2/13/ 26.	31.7/13/ 29.
CO BCKGRD METER/RANGE/PPM				.2/13/ 0.	.4/13/ 0.	.0/13/ 0.
CO2 SAMPLE METER/RANGE/PCT				71.1/11/ .6223	51.1/11/ .3960	63.7/11/ .5327
CO2 BCKGRD METER/RANGE/PCT				6.7/11/ .0396	6.8/11/ .0403	6.8/11/ .0403
NOX SAMPLE METER/RANGE/PPM				49.9/ 1/ 12.5	34.2/ 1/ 8.6	44.7/ 1/ 11.2
NOX BCKGRD METER/RANGE/PPM				.2/ 1/ .0	.3/ 1/ .0	.0/ 1/ .0
DILUTION FACTOR				21.49	33.72	25.12
THC CONCENTRATION PPM				29.	19.	20.
CO CONCENTRATION PPM				32.	24.	28.
CO2 CONCENTRATION PCT				.5845	.3569	.4941
NOX CONCENTRATION PPM				12.5	8.6	11.2
FILTER WT. MG (EFFICIENCY, %)				1.855 (95.)	1.855 (93.)	1.355 (94.)
THC MASS GRAMS				1.67	1.84	1.17
CO MASS GRAMS				3.68	4.83	3.21
CO2 MASS GRAMS				1065.2	1114.1	898.4
NOX MASS GRAMS				2.65	3.10	2.38
PARTICULATE MASS GRAMS				.87	.85	.62
THC GRAMS/MI				.46	.47	.33
CO GRAMS/MI				1.02	1.24	.89
CO2 GRAMS/MI				295.2	285.7	250.0
NOX GRAMS/MI				.73	.80	.66
FUEL ECONOMY IN MPG				34.08	35.16	40.28
RUN TIME SECONDS				505.	867.	504.
MEASURED DISTANCE MI				3.61	3.90	3.59
SCF, DRY				.967	.969	.967
COMPOSITE RESULTS						
TEST NUMBER					3-BAG	(4-BAG)
BAROMETER MM HG	743.0			CARBON DIOXIDE G/MI	277.9	(.0)
HUMIDITY G/KG	13.8			FUEL ECONOMY MPG	36.18	(.00)
TEMPERATURE DEG C	21.1			HYDROCARBONS (THC) G/MI	.43	(.00)
				CARBON MONOXIDE G/MI	1.10	(.00)
				OXIDES OF NITROGEN G/MI	.75	(.00)
				PARTICULATES G/MI	.211	(.000)

TABLE C-19. VOLKSWAGEN WITH TRAP AND LOW AROMATIC FUEL, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	3	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG (2625. LBS)
VEHICLE MODEL	0 VW JETTA	DATE	12/22/87			ACTUAL ROAD LOAD	5.2 KW (7.0 HP)
ENGINE 1.6 L (98. CID) L-4		BAG CART NO.	1 / CVS NO.	17		DIESEL	EM-752-F
TRANSMISSION A3		DYNO NO.	2			ODOMETER	34247. KM (21280. MILES)
BAROMETER	744.22 MM HG (29.30 IN HG)	DRY BULB TEMP.	24.4 DEG C (76.0 DEG F)				
RELATIVE HUMIDITY	45. PCT	ABS. HUMIDITY	8.8 GM/KG			NOX HUMIDITY CORRECTION FACTOR	.94
BAG RESULTS							
BAG NUMBER		1	2	3	4		
DESCRIPTION		COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED		
BLOWER DIF P MM. H2O (IN. H2O)		1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET P MM. H2O (IN. H2O)		1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C (DEG. F)		39.4 (103.0)	41.1 (106.0)	39.4 (103.0)	41.1 (106.0)		
BLOWER REVOLUTIONS		4949.	8499.	4948.	8498.		
TOT FLOW STD. CU. METRES (SCF)		100.6 (3551.)	172.0 (6074.)	100.5 (3550.)	172.0 (6072.)		
THC SAMPLE METER/RANGE/PPM		16.8/1022/ 17.	14.0/1022/ 14.	16.4/1022/ 16.	16.8/1022/ 17.		
THC BCKGRD METER/RANGE/PPM		4.1/1022/ 4.	6.0/1022/ 6.	8.9/1022/ 9.	8.9/1022/ 9.		
CO SAMPLE METER/RANGE/PPM		27.5/ 13/ 25.	18.6/ 13/ 17.	22.8/ 13/ 21.	19.5/ 13/ 17.		
CO BCKGRD METER/RANGE/PPM		.1/ 13/ 0.	.1/ 13/ 0.	.0/ 13/ 0.	.6/ 13/ 1.		
CO2 SAMPLE METER/RANGE/PCT		74.0/ 11/ .6595	53.0/ 11/ .4154	65.9/ 11/ .5586	51.7/ 11/ .4021		
CO2 BCKGRD METER/RANGE/PCT		7.1/ 11/ .0421	7.1/ 11/ .0421	7.3/ 11/ .0433	7.4/ 11/ .0440		
NOX SAMPLE METER/RANGE/PPM		62.8/ 1/ 15.8	45.2/ 1/ 11.4	56.2/ 1/ 14.1	43.3/ 1/ 10.9		
NOX BCKGRD METER/RANGE/PPM		.6/ 1/ .2	.4/ 1/ .1	.8/ 1/ .2	.7/ 1/ .2		
DILUTION FACTOR		19.79	31.39	23.36	32.39		
THC CONCENTRATION PPM		13.	8.	8.	8.		
CO CONCENTRATION PPM		24.	16.	20.	17.		
CO2 CONCENTRATION PCT		.6195	.3747	.5171	.3595		
NOX CONCENTRATION PPM		15.6	11.3	13.9	10.7		
FILTER WT. MG (EFFICIENCY, %)		.226 (65.)	.257 (79.)	.120 (58.)	.137 (56.)		
THC MASS GRAMS		.75	.82	.46	.82		
CO MASS GRAMS		2.83	3.24	2.34	3.32		
CO2 MASS GRAMS		1140.5	1179.9	951.8	1131.8		
NOX MASS GRAMS		2.82	3.48	2.52	3.31		
PARTICULATE MASS GRAMS		.16	.14	.09	.11		
THC GRAMS/MI		.21	.21	.13	.21		
CO GRAMS/MI		.79	.83	.65	.85		
CO2 GRAMS/MI		317.2	304.0	264.9	290.8		
NOX GRAMS/MI		.79	.90	.70	.85		
FUEL ECONOMY IN MPG		30.46	31.13	31.77	36.50	34.70	33.19
RUN TIME	SECONDS	505.	868.	505.	868.		
MEASURED DISTANCE	MI	3.60	7.48	3.88	3.59	7.49	3.89
SCF, DRY		.979	.981	.981	.980	.981	.982
DFC, WET (DRY)		.961 (.947)			.965 (.951)		
TOT VOL (SCFM) / SAM BLR (SCFM)		272.6/ .00			272.5/ .00		
COMPOSITE RESULTS							
TEST NUMBER						3-BAG	(4-BAG)
BAROMETER	MM HG	744.2				296.0	(292.1)
HUMIDITY	G/KG	8.8				32.64	(33.07)
TEMPERATURE	DEG C	24.4				.19	(.19)
						CARBON DIOXIDE G/MI	
						FUEL ECONOMY MPG	
						HYDROCARBONS (THC) G/MI	
						CARBON MONOXIDE G/MI	
						OXIDES OF NITROGEN G/MI	
						PARTICULATES G/MI	

TABLE C-20. VOLKSWAGEN WITH TRAP AND LOW AROMATIC FUEL, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	3	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	12/23/87	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2 / CVS NO.	17	DIESEL EM-752-F
TRANSMISSION A3				DYNO NO.	2		ODOMETER 34289. KM(21306. MILES)
BAROMETER 741.43 MM HG(29.19 IN HG)				DRY BULB TEMP. 22.8 DEG C(73.0 DEG F)			
RELATIVE HUMIDITY 54. PCT				ABS. HUMIDITY 9.6 GM/KG		NOX HUMIDITY CORRECTION FACTOR	.96
BAG RESULTS							
BAG NUMBER				1	2	3	4
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				39.4 (103.0)	42.2 (108.0)	42.8 (109.0)	42.2 (108.0)
BLOWER REVOLUTIONS				4950.	8497.	4941.	8497.
TOT FLOW STD. CU. METRES(SCF)				100.1 (3535.)	170.7 (6026.)	99.1 (3500.)	170.7 (6026.)
THC SAMPLE METER/RANGE/PPM	19.3/1022/	19.		16.5/1022/	16.	17.3/1022/	17.
THC BCKGRD METER/RANGE/PPM	8.0/1022/	8.		8.0/1022/	8.	8.3/1022/	8.
CO SAMPLE METER/RANGE/PPM	28.6/	12/	29.	19.7/	12/	20.	20.1/
CO BCKGRD METER/RANGE/PPM	1.9/	12/	2.	1.8/	12/	2.	1.3/
CO2 SAMPLE METER/RANGE/PCT	79.1/	14/	.6453	63.6/	14/	.4204	62.7/
CO2 BCKGRD METER/RANGE/PCT	14.0/	14/	.0497	13.6/	14/	.0481	13.1/
NOX SAMPLE METER/RANGE/PPM	61.1/	1/	15.3	44.7/	1/	11.2	57.0/
NOX BCKGRD METER/RANGE/PPM	1.4/	1/	.4	1.4/	1/	.4	.9/
DILUTION FACTOR				20.20	30.98	22.89	31.77
THC CONCENTRATION PPM				12.	9.	9.	10.
CO CONCENTRATION PPM				26.	18.	22.	18.
CO2 CONCENTRATION PCT				.5980	.3738	.5248	.3650
NOX CONCENTRATION PPM				15.0	10.9	14.1	10.7
FILTER WT. MG (EFFICIENCY, %)				.124 (60.)	.186 (68.)	.092 (47.)	.135 (58.)
THC MASS GRAMS				.68	.87	.54	.99
CO MASS GRAMS				3.04	3.50	2.52	3.68
CO2 MASS GRAMS				1096.0	1168.1	952.4	1140.6
NOX MASS GRAMS				2.76	3.41	2.57	3.38
PARTICULATE MASS GRAMS				.09	.12	.09	.10
THC GRAMS/MI				.19	.22	.15	.26
CO GRAMS/MI				.84	.90	.70	.95
CO2 GRAMS/MI				304.6	301.1	265.9	294.5
NOX GRAMS/MI				.77	.88	.72	.87
FUEL ECONOMY IN MPG				31.71	31.89	32.06	36.34
RUN TIME		SECONDS		505.	868.	505.	868.
MEASURED DISTANCE		MI		3.60	7.48	3.88	3.58
SCF, DRY				.976	.978	.979	.977
DFC, WET (DRY)					.961(.945)		.964(.947)
TOT VOL (SCM) / SAM BLR (SCM)					270.8/ .00		269.8/ .00

COMPOSITE RESULTS							
TEST NUMBER						3-BAG	(4-BAG)
BAROMETER MM HG	741.4				CARBON DIOXIDE G/MI	292.2	(290.2)
HUMIDITY G/KG	9.6				FUEL ECONOMY MPG	33.05	(33.26)
TEMPERATURE DEG C	22.8				HYDROCARBONS (THC) G/MI	.20	(.21)
					CARBON MONOXIDE G/MI	.84	(.85)
					OXIDES OF NITROGEN G/MI	.81	(.81)
					PARTICULATES G/MI	.028	(.026)

TABLE C-21. VOLKSWAGEN WITHOUT TRAP AND WITH LOW AROMATIC FUEL, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 4	RUN 1	VEHICLE NO.	TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL 0 VW JETTA	DATE 1/ 6/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)	
ENGINE 1.6 L(98. CID) L-4	BAG CART NO. 1 / CVS NO. 17	DIESEL EM-752-F	
TRANSMISSION A3	DYNO NO. 2	ODOMETER 34425. KM(21391. MILES)	
BAROMETER 743.20 MM HG(29.26 IN HG)	DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)		
RELATIVE HUMIDITY 32. PCT	ABS. HUMIDITY 6.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR .87	
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.1 (106.0)	41.7 (107.0)	42.2 (108.0)
BLOWER REVOLUTIONS	4950.	8503.	4941.
TOT FLOW STD. CU. METRES(SCF)	100.0 (3531.)	171.6 (6058.)	99.6 (3515.)
THC SAMPLE METER/RANGE/PPM	14.6/1022/ 15.	12.7/1022/ 13.	12.2/1022/ 12.
THC BCKGRD METER/RANGE/PPM	3.8/1022/ 4.	3.4/1022/ 3.	4.1/1022/ 4.
CO SAMPLE METER/RANGE/PPM	24.9/ 13/ 22.	20.2/ 13/ 18.	22.5/ 13/ 20.
CO BCKGRD METER/RANGE/PPM	.7/ 13/ 1.	.7/ 13/ 1.	.1/ 13/ 0.
CO2 SAMPLE METER/RANGE/PCT	72.0/ 11/ .6337	51.5/ 11/ .4001	66.3/ 11/ .5634
CO2 BCKGRD METER/RANGE/PCT	8.4/ 11/ .0502	8.3/ 11/ .0496	7.9/ 11/ .0471
NOX SAMPLE METER/RANGE/PPM	60.9/ 1/ 15.3	40.7/ 1/ 10.2	54.2/ 1/ 13.6
NOX BCKGRD METER/RANGE/PPM	1.9/ 1/ .5	1.6/ 1/ .4	1.4/ 1/ .4
DILUTION FACTOR	20.61	32.58	23.18
THC CONCENTRATION PPM	11.	9.	8.
CO CONCENTRATION PPM	21.	17.	20.
CO2 CONCENTRATION PCT	.5859	.3520	.5183
NOX CONCENTRATION PPM	14.8	9.8	13.3
FILTER WT. MG (EFFICIENCY, %)	1.117 (92.)	1.123 (91.)	1.249 (94.)
THC MASS GRAMS	.64	.94	.48
CO MASS GRAMS	2.49	3.44	2.29
CO2 MASS GRAMS	1072.8	1105.7	944.8
NOX MASS GRAMS	2.47	2.81	2.20
PARTICULATE MASS GRAMS	.55	.55	.59
THC GRAMS/MI	.18	.24	.13
CO GRAMS/MI	.69	.89	.64
CO2 GRAMS/MI	298.2	285.4	263.6
NOX GRAMS/MI	.69	.73	.61
FUEL ECONOMY IN MPG	32.42	33.12	33.80
RUN TIME SECONDS	505.	867.	505.
MEASURED DISTANCE MI	3.60	7.47	3.87
SCF, DRY	.983	.985	.986
DFC, WET (DRY)	.963(.953)		.965(.955)
TOT VOL (SCM) / SAM BLR (SCM)	271.6/ .00		271.0/ .00

COMPOSITE RESULTS

TEST NUMBER

BAROMETER MM HG 743.2

HUMIDITY G/KG 6.2

TEMPERATURE DEG C 24.4

	3-BAG	(4-BAG)
CARBON DIOXIDE G/MI	282.1	(281.3)
FUEL ECONOMY MPG	34.23	(34.32)
HYDROCARBONS (THC) G/MI	.20	(.19)
CARBON MONOXIDE G/MI	.78	(.80)
OXIDES OF NITROGEN G/MI	.69	(.69)
PARTICULATES G/MI	.151	(.171)

TABLE C-22. VOLKSWAGEN WITHOUT TRAP AND WITH LOW AROMATIC FUEL, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	4	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	1/ 7/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2 / CVS NO.	17	DIESEL EM-752-F
TRANSMISSION A3				DYNO NO.	2		ODOMETER 34466. KM(21416. MILES)
BAROMETER	748.79	MM HG	(29.48 IN HG)	DRY BULB TEMP.	23.3 DEG C(74.0 DEG F)		
RELATIVE HUMIDITY	30.	PCT		ABS. HUMIDITY	5.4 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.85
BAG RESULTS							
DESCRIPTION				1	2	3	4
		COLD TRANSIENT		STABILIZED		HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)		1778.0 (70.0)		1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)		1778.0 (70.0)		1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)		43.3 (110.0)		42.8 (109.0)		41.7 (107.0)	41.7 (107.0)
BLOWER REVOLUTIONS		4949.		8504.		4943.	8503.
TOT FLOW STD. CU. METRES(SCF)		100.4 (3546.)		172.9 (6104.)		100.7 (3557.)	173.3 (6119.)
THC SAMPLE METER/RANGE/PPM		16.6/12/ 17.		16.8/12/ 17.		15.5/12/ 16.	15.5/12/ 16.
THC BCKGRD METER/RANGE/PPM		3.3/12/ 3.		4.1/12/ 4.		8.5/12/ 9.	8.5/12/ 9.
CO SAMPLE METER/RANGE/PPM		25.0/12/ 25.		20.0/12/ 20.		21.0/12/ 21.	18.8/12/ 19.
CO BCKGRD METER/RANGE/PPM		4.3/12/ 4.		3.2/12/ 3.		1.1/12/ 1.	1.0/12/ 1.
CO2 SAMPLE METER/RANGE/PCT		76.7/14/ .6047		60.1/14/ .3797		71.4/14/ .5233	59.1/14/ .3687
CO2 BCKGRD METER/RANGE/PCT		13.7/14/ .0485		13.3/14/ .0468		12.4/14/ .0432	12.4/14/ .0432
NOX SAMPLE METER/RANGE/PPM		65.3/ 1/ 16.4		43.8/ 1/ 11.0		59.4/ 1/ 14.9	43.9/ 1/ 11.0
NOX BCKGRD METER/RANGE/PPM		.6/ 1/ .2		.7/ 1/ .2		.7/ 1/ .2	1.0/ 1/ .3
DILUTION FACTOR		22.20		35.26		25.66	36.33
THC CONCENTRATION PPM		13.		13.		7.	7.
CO CONCENTRATION PPM		20.		17.		20.	18.
CO2 CONCENTRATION PCT		.5584		.3342		.4818	.3267
NOX CONCENTRATION PPM		16.2		10.8		14.7	10.8
FILTER WT. MG (EFFICIENCY, %)		1.130 (93.)		1.300 (92.)		.843 (93.)	1.205 (93.)
THC MASS GRAMS		.78		1.28		.43	.73
CO MASS GRAMS		2.39		3.36		2.31	3.57
CO2 MASS GRAMS		1026.8		1057.8		888.4	1036.3
NOX MASS GRAMS		2.65		3.05		2.41	3.04
PARTICULATE MASS GRAMS		.57		.64		.41	.60
THC GRAMS/MI		.22		.33		.12	.19
CO GRAMS/MI		.67		.87		.65	.93
CO2 GRAMS/MI		286.6		274.3		248.5	270.1
NOX GRAMS/MI		.74		.79		.68	.79
FUEL ECONOMY IN MPG		35.25	36.01	36.74	40.69	38.89	37.36
RUN TIME	SECONDS	505.		868.		505.	868.
MEASURED DISTANCE	MI	3.58	7.44	3.86	3.58	7.41	3.84
SCF, DRY		.985	.986	.987	.986	.986	.987
DFC, WET (DRY)			.966 (.956)			.968 (.959)	
TOT VOL (SCM) / SAM BLR (SCM)		273.3/	.00			274.0/	.00

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER	MM HG	748.8	(268.5)
HUMIDITY	G/KG	5.4	
TEMPERATURE	DEG C	23.3	
		CARBON DIOXIDE G/MI	269.8 (268.5)
		FUEL ECONOMY MPG	37.41 (37.60)
		HYDROCARBONS (THC) G/MI	.25 (.21)
		CARBON MONOXIDE G/MI	.77 (.78)
		OXIDES OF NITROGEN G/MI	.75 (.75)
		PARTICULATES G/MI	.151 (.147)

TABLE C-23. VOLKSWAGEN LOADED TRAP TEST WITH NO ADDITIVE, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	L2	RUN	VEHICLE NO.	TEST WEIGHT 1191. KG(2625. LBS)	
VEHICLE MODEL	0 VW JETTA		DATE 2/25/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)	
ENGINE 1.6 L(98. CID) L-4			BAG CART NO. 2	DIESEL EM-619-F	
TRANSMISSION A3			DYNO NO. 2	ODOMETER 35261. KM(21910. MILES)	
			CVS NO. 17		
BAROMETER 750.82 MM HG(29.56 IN HG)			DRY BULB TEMP. 24.4 DEG C(76.0 DEG F)		
RELATIVE HUMIDITY 35. PCT			ABS. HUMIDITY 6.7 GM/KG	NOX HUMIDITY CORRECTION FACTOR .88	
BAG RESULTS					
			1	2	3
			COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)			1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)			1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)			40.6 (105.0)	41.7 (107.0)	42.8 (109.0)
BLOWER REVOLUTIONS			4946.	8503.	4952.
TOT FLOW STD. CU. METRES(SCF)			101.4 (3581.)	173.9 (6141.)	101.0 (3567.)
THC SAMPLE METER/RANGE/PPM			12.9/1022/ 13.	10.7/1022/ 11.	12.1/1022/ 12.
THC BCKGRD METER/RANGE/PPM			4.0/1022/ 4.	4.0/1022/ 4.	4.3/1022/ 4.
CO SAMPLE METER/RANGE/PPM			33.4/ 12/ 34.	23.8/ 12/ 24.	28.7/ 12/ 29.
CO BCKGRD METER/RANGE/PPM			1.5/ 12/ 2.	1.2/ 12/ 1.	.7/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT			80.0/ 14/.6612	64.1/ 14/.4264	76.1/ 14/.5950
CO2 BCKGRD METER/RANGE/PCT			14.4/ 14/.0514	13.8/ 14/.0489	13.2/ 14/.0464
NOX SAMPLE METER/RANGE/PPM			64.2/ 1/ 16.1	45.7/ 1/ 11.5	58.7/ 1/ 14.7
NOX BCKGRD METER/RANGE/PPM			.9/ 1/ .2	.5/ 1/ .1	.0/ 1/ .0
DILUTION FACTOR			19.73	.30.55	21.93
THC CONCENTRATION PPM			9.	7.	8.
CO CONCENTRATION PPM			31.	22.	28.
CO2 CONCENTRATION PCT			.6124	.3791	.5507
NOX CONCENTRATION PPM			15.9	11.3	14.7
FILTER WT. MG (EFFICIENCY, %)			.094 (76.)	.212 (80.)	.087 (82.)
THC MASS GRAMS			.54	.69	.47
CO MASS GRAMS			3.69	4.52	3.23
CO2 MASS GRAMS			1136.9	1207.2	1018.5
NOX MASS GRAMS			2.72	3.34	2.51
PARTICULATE MASS GRAMS			.05	.12	.05
THC GRAMS/MI			.15	.18	.13
CO GRAMS/MI			1.02	1.15	.89
CO2 GRAMS/MI			314.4	308.3	279.9
NOX GRAMS/MI			.75	.85	.69
FUEL ECONOMY IN MPG			30.71	31.28	34.50
RUN TIME SECONDS			505.	868.	505.
MEASURED DISTANCE MI			3.62	3.92	3.64
SCF, DRY			.982	.985	.983

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG	750.8	301.8	(.0)
HUMIDITY G/KG	6.7	31.98	(.00)
TEMPERATURE DEG C	24.4	.16	(.00)
CARBON DIOXIDE G/MI		1.05	(.00)
FUEL ECONOMY MPG		.79	(.00)
HYDROCARBONS (THC) G/MI		.022	(.000)
CARBON MONOXIDE G/MI			
OXIDES OF NITROGEN G/MI			
PARTICULATES G/MI			

TABLE C-24. VOLKSWAGEN REGENERATION WITH LOW AROMATIC FUEL, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	R-1	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0 VW JETTA	DATE	4/ 1/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4		BAG CART NO.	1	DIESEL EM-752-F
TRANSMISSION A3		DYNO NO.	2	ODOMETER 35797. KM(22243. MILES)
		CVS NO.	17	
BAROMETER 735.08 MM HG(28.94 IN HG)		DRY BULB TEMP. 26.1 DEG C(79.0 DEG F)		
RELATIVE HUMIDITY 50. PCT		ABS. HUMIDITY 11.0 GM/KG		NOX HUMIDITY CORRECTION FACTOR 1.01
BAG RESULTS				
TEST CYCLE		HFET		
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)		1803.4 (71.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)		44.4 (112.0)		
BLOWER REVOLUTIONS		7497.		
TOT FLOW STD. CU. METRES(SCF)		147.4 (5206.)		
THC SAMPLE METER/RANGE/PPM		17.6/1022/ 18.		
THC BCKGRD METER/RANGE/PPM		5.6/1022/ 6.		
CO SAMPLE METER/RANGE/PPM		82.8/ 12/ 197.		
CO BCKGRD METER/RANGE/PPM		.6/ 12/ 1.		
CO2 SAMPLE METER/RANGE/PCT		85.1/ 14/ .8141		
CO2 BCKGRD METER/RANGE/PCT		12.2/ 14/ .0747		
NOX SAMPLE METER/RANGE/PPM		73.8/ 1/ 18.5		
NOX BCKGRD METER/RANGE/PPM		.7/ 1/ .2		
DILUTION FACTOR		15.73		
THC CONCENTRATION PPM		12.		
CO CONCENTRATION PPM		189.		
CO2 CONCENTRATION PCT		.7442		
NOX CONCENTRATION PPM		18.3		
FILTER WT. MG (EFFICIENCY, %)		.540 (68.)		
THC MASS GRAMS		1.06		
CO MASS GRAMS		32.48		
CO2 MASS GRAMS		2008.7		
NOX MASS GRAMS		5.23		
PARTICULATE MASS GRAMS		.34		
RUN TIME SECONDS		765.		
DFC, WET (DRY)		.936 (.921)		
SCF, WET (DRY)		1.000 (.976)		
VOL (SCM)		147.4		
SAM BLR (SCM)		.00		
MI (MEASURED)		10.26		
TEST NUMBER,		1		
BAROMETER, MM HG		735.1		
HUMIDITY, G/KG		11.0		
TEMPERATURE, DEG C		26.1		
CARBON DIOXIDE, G/MI		195.8		
FUEL ECONOMY, MPG		48.3		
HYDROCARBONS, (THC) G/MI		.10		
CARBON MONOXIDE, G/MI		3.17		
OXIDES OF NITROGEN, G/MI		.51		
PARTICULATES, G/MI		.033		

TABLE C-25. VOLKSWAGEN REGENERATION WITH LOW AROMATIC FUEL, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	R-2	VEHICLE NO.	TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0 VW JETTA	DATE 4/ 4/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L (98. CID) L-4		BAG CART NO. 2	DIESEL EM-752-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 35921. KM(22320. MILES)
		CVS NO. 17	
BAROMETER 740.41 MM HG(29.15 IN HG)		DRY BULB TEMP. 29.4 DEG C(85.0 DEG F)	
RELATIVE HUMIDITY 44. PCT		ABS. HUMIDITY 11.8 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.04
BAG RESULTS			
TEST CYCLE		HFET	
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)		1828.8 (72.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)		47.2 (117.0)	
BLOWER REVOLUTIONS		7501.	
TOT FLOW STD. CU. METRES(SCF)		147.2 (5197.)	
THC SAMPLE METER/RANGE/PPM		19.4/1022/ 19.	
THC BCKGRD METER/RANGE/PPM		6.8/1022/ 7.	
CO SAMPLE METER/RANGE/PPM		45.6/ 12/ 46.	
CO BCKGRD METER/RANGE/PPM		3.3/ 12/ 3.	
CO2 SAMPLE METER/RANGE/PCT		85.4/ 14/.7652	
CO2 BCKGRD METER/RANGE/PCT		13.9/ 14/.0493	
NOX SAMPLE METER/RANGE/PPM		70.9/ 1/ 17.8	
NOX BCKGRD METER/RANGE/PPM		.8/ 1/ .2	
DILUTION FACTOR		17.02	
THC CONCENTRATION PPM		13.	
CO CONCENTRATION PPM		41.	
CO2 CONCENTRATION PCT		.7188	
NOX CONCENTRATION PPM		17.6	
FILTER WT. MG (EFFICIENCY, %)		.525 (78.)	
THC MASS GRAMS		1.12	
CO MASS GRAMS		7.06	
CO2 MASS GRAMS		1936.8	
NOX MASS GRAMS		5.12	
PARTICULATE MASS GRAMS		.29	
RUN TIME SECONDS		766.	
DFC, WET (DRY)		.941 (.928)	
SCF, WET (DRY)		1.000 (.978)	
VOL (SCM)		147.2	
SAM BLR (SCM)		.00	
MI (MEASURED)		10.26	
TEST NUMBER,			
BAROMETER, MM HG		740.4	
HUMIDITY, G/KG		11.8	
TEMPERATURE, DEG C		29.4	
CARBON DIOXIDE, G/MI		188.8	
FUEL ECONOMY, MPG		51.1	
HYDROCARBONS, (THC) G/MI		.11	
CARBON MONOXIDE, G/MI		.69	
OXIDES OF NITROGEN, G/MI		.50	
PARTICULATES, G/MI		.028	

TABLE C-26. VOLKSWAGEN BASELINE WITH TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	1	RUN	4	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/ 5/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	36030. KM(22388. MILES)
				CVS NO.	17		
BAROMETER 740.41 MM HG(29.15 IN HG)				DRY BULB TEMP. 26.1 DEG C(79.0 DEG F)			
RELATIVE HUMIDITY 57. PCT				ABS. HUMIDITY 12.4 GM/KG			NOX HUMIDITY CORRECTION FACTOR 1.06
BAG RESULTS							
BAG NUMBER		1		2		3	
DESCRIPTION		COLD TRANSIENT		STABILIZED		HOT TRANSIENT	
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)		1778.0 (70.0)		1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)		1778.0 (70.0)		1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)		43.3 (110.0)		43.9 (111.0)		44.4 (112.0)	
BLOWER REVOLUTIONS		4941.		8508.		4945.	
TOT FLOW STD. CU. METRES(SCF)		98.8 (3488.)		169.8 (5995.)		98.5 (3479.)	
THC SAMPLE METER/RANGE/PPM		18.8/1022/ 19.		13.9/1022/ 14.		15.5/1022/ 16.	
THC BCKGRD METER/RANGE/PPM		4.8/1022/ 5.		4.8/1022/ 5.		5.1/1022/ 5.	
CO SAMPLE METER/RANGE/PPM		53.8/ 12/ 54.		24.6/ 12/ 25.		35.8/ 12/ 36.	
CO BCKGRD METER/RANGE/PPM		.5/ 12/ 1.		.5/ 12/ 1.		.2/ 12/ 0.	
CO2 SAMPLE METER/RANGE/PCT		81.3/ 14/ .6848		64.6/ 14/ .4326		76.7/ 14/ .6047	
CO2 BCKGRD METER/RANGE/PCT		12.5/ 14/ .0436		12.7/ 14/ .0444		13.0/ 14/ .0456	
NOX SAMPLE METER/RANGE/PPM		58.5/ 1/ 14.7		41.8/ 1/ 10.5		54.0/ 1/ 13.5	
NOX BCKGRD METER/RANGE/PPM		.5/ 1/ .1		.5/ 1/ .1		.5/ 1/ .1	
DILUTION FACTOR		19.54		30.98		22.17	
THC CONCENTRATION PPM		14.		9.		11.	
CO CONCENTRATION PPM		52.		24.		35.	
CO2 CONCENTRATION PCT		.6435		.3896		.5612	
NOX CONCENTRATION PPM		14.5		10.4		13.4	
FILTER WT. MG (EFFICIENCY, %)		.275 (69.)		.288 (66.)		.170 (54.)	
THC MASS GRAMS		.81		.91		.61	
CO MASS GRAMS		5.95		4.67		3.97	
CO2 MASS GRAMS		1163.9		1211.1		1012.2	
NOX MASS GRAMS		2.91		3.57		2.68	
PARTICULATE MASS GRAMS		.17		.19		.14	
THC GRAMS/MI		.22		.23		.17	
CO GRAMS/MI		1.65		1.20		1.10	
CO2 GRAMS/MI		321.9		310.0		279.4	
NOX GRAMS/MI		.81		.91		.74	
FUEL ECONOMY IN MPG		31.26		32.52		36.10	
RUN TIME	SECONDS	504.		869.		505.	
MEASURED DISTANCE	MI	3.62		3.91		3.62	
SCF, DRY		.975		.978		.976	

COMPOSITE RESULTS

TEST NUMBER			3-BAG	(4-BAG)
BAROMETER MM HG	740.4	CARBON DIOXIDE G/MI	304.1	(.0)
HUMIDITY G/KG	12.4	FUEL ECONOMY MPG	33.14	(.00)
TEMPERATURE DEG C	26.1	HYDROCARBONS (THC) G/MI	.21	(.00)
		CARBON MONOXIDE G/MI	1.26	(.00)
		OXIDES OF NITROGEN G/MI	.84	(.00)
		PARTICULATES G/MI	.045	(.000)

TABLE C-28. VOLKSWAGEN WITH FAILED INJECTORS AND TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	5	RUN	3	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/11/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2 / CVS NO.	17
TRANSMISSION A3				DYNO NO.	2	DIESEL EM-619-F
						ODOMETER 22677. KM(14091. MILES)

BAROMETER 745.49 MM HG(29.35 IN HG)	DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)	NOX HUMIDITY CORRECTION FACTOR .81		
RELATIVE HUMIDITY 21. PCT	ABS. HUMIDITY 3.8 GM/KG			
BAG RESULTS				
BAG NUMBER	1	2	3	4
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	41.7 (107.0)	42.8 (109.0)	42.8 (109.0)	42.8 (109.0)
BLOWER REVOLUTIONS	5007.	8512.	4944.	8512.
TOT FLOW STD. CU. METRES(SCF)	101.5 (3582.)	172.1 (6075.)	99.9 (3528.)	172.1 (6075.)
THC SAMPLE METER/RANGE/PPM	20.1/1022/ 20.	17.9/1022/ 18.	15.2/1022/ 15.	17.0/1022/ 17.
THC BCKGRD METER/RANGE/PPM	5.8/1022/ 6.	5.8/1022/ 6.	5.7/1022/ 6.	5.7/1022/ 6.
CO SAMPLE METER/RANGE/PPM	76.3/ 12/ 77.	26.7/ 12/ 27.	45.0/ 12/ 45.	24.9/ 12/ 25.
CO BCKGRD METER/RANGE/PPM	.0/ 12/ 0.	.0/ 12/ 0.	.0/ 12/ 0.	.0/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	80.0/ 14/ .6612	63.5/ 14/ .4192	74.1/ 14/ .5635	61.7/ 14/ .3979
CO2 BCKGRD METER/RANGE/PCT	12.2/ 14/ .0424	12.0/ 14/ .0416	11.6/ 14/ .0400	11.7/ 14/ .0404
NOX SAMPLE METER/RANGE/PPM	66.5/ 1/ 16.7	42.5/ 1/ 10.7	56.3/ 1/ 14.1	39.8/ 1/ 10.0
NOX BCKGRD METER/RANGE/PPM	.9/ 1/ .2	.9/ 1/ .2	.7/ 1/ .2	.5/ 1/ .1
DILUTION FACTOR	20.15	31.91	23.74	33.62
THC CONCENTRATION PPM	15.	12.	10.	11.
CO CONCENTRATION PPM	75.	26.	44.	25.
CO2 CONCENTRATION PCT	.6209	.3789	.5251	.3587
NOX CONCENTRATION PPM	16.4	10.4	13.9	9.9
FILTER WT. MG (EFFICIENCY, %)	.072 (71.)	.127 (71.)	.090 (70.)	.105 (97.)
THC MASS GRAMS	.85	1.22	.56	1.14
CO MASS GRAMS	8.87	5.30	5.15	4.95
CO2 MASS GRAMS	1153.3	1193.5	960.7	1130.0
NOX MASS GRAMS	2.60	2.80	2.17	2.64
PARTICULATE MASS GRAMS	.04	.08	.06	.05
THC GRAMS/MI	.23	.31	.15	.29
CO GRAMS/MI	2.40	1.36	1.42	1.27
CO2 GRAMS/MI	312.6	305.3	264.9	289.6
NOX GRAMS/MI	.70	.72	.60	.68
FUEL ECONOMY IN MPG	32.06	32.52	32.96	34.75
RUN TIME SECONDS	511.	868.	504.	868.
MEASURED DISTANCE MI	3.69	7.60	3.91	3.90
SCF, DRY	.987	.989	.988	.990
DFC, WET (DRY)	.962(.955)		.966(.959)	
TOT VOL (SCM) / SAM BLR (SCM)	273.5/ .00		272.0/ .00	

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG	745.5	CARBON DIOXIDE G/MI	295.8 (291.1)
HUMIDITY G/KG	3.8	FUEL ECONOMY MPG	33.99 (34.54)
TEMPERATURE DEG C	23.3	HYDROCARBONS (THC) G/MI	.25 (.25)
		CARBON MONOXIDE G/MI	1.59 (1.57)
		OXIDES OF NITROGEN G/MI	.68 (.67)
		PARTICULATES G/MI	.017 (.015)

TABLE C-29. VOLKSWAGEN WITH FAILED INJECTORS AND TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	5	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/ 7/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6.L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	22595. KM(14040. MILES)
BAROMETER	743.20	MM HG	(29.26 IN HG)	CVS NO.	17		
RELATIVE HUMIDITY	20.	PCT					
BAG RESULTS							
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				45.0 (113.0)			
BLOWER REVOLUTIONS				7483.			
TOT FLOW STD. CU. METRES(SCF)				149.5 (5280.)			
THC SAMPLE METER/RANGE/PPM				20.6/1022/ 21.			
THC BCKGRD METER/RANGE/PPM				9.7/1022/ 10.			
CO SAMPLE METER/RANGE/PPM				69.7/ 12/ 70.			
CO BCKGRD METER/RANGE/PPM				.3/ 12/ 0.			
CO2 SAMPLE METER/RANGE/PCT				90.0/ 14/ .8676			
CO2 BCKGRD METER/RANGE/PCT				12.2/ 14/ .0424			
NOX SAMPLE METER/RANGE/PPM				88.3/ 1/ 22.1			
NOX BCKGRD METER/RANGE/PPM				.3/ 1/ .0			
DILUTION FACTOR				15.42			
THC CONCENTRATION PPM				12.			
CO CONCENTRATION PPM				68.			
CO2 CONCENTRATION PCT				.8280			
NOX CONCENTRATION PPM				22.0			
FILTER WT. MG (EFFICIENCY, %)				.164 (70.)			
THC MASS GRAMS				1.00			
CO MASS GRAMS				11.84			
CO2 MASS GRAMS				2266.7			
NOX MASS GRAMS				5.29			
PARTICULATE MASS GRAMS				.10			
RUN TIME		SECONDS		765.			
DFC, WET (DRY)				.935 (.929)			
SCF, WET (DRY)				1.000 (.986)			
VOL (SCM)				149.5			
SAM BLR (SCM)				.00			
MI (MEASURED)				10.29			
TEST NUMBER,							
BAROMETER,	MM HG			743.2			
HUMIDITY,	G/KG			5.0			
TEMPERATURE,	DEG C			28.9			
CARBON DIOXIDE,	G/MI			220.2			
FUEL ECONOMY,	MPG			45.7			
HYDROCARBONS, (THC)	G/MI			.10			
CARBON MONOXIDE,	G/MI			1.15			
OXIDES OF NITROGEN,	G/MI			.51			
PARTICULATES,	G/MI			.010			

TABLE C-30. VOLKSWAGEN WITH FAILED INJECTORS AND TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 5	RUN 1	VEHICLE NO.	TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL 0	VW JETTA	DATE 4/7/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L (98. CID) L-4		BAG CART NO. 2	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 22611. KM(14050. MILES)
		CVS NO. 17	
BAROMETER 742.19 MM HG(29.22 IN HG)		DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)	
RELATIVE HUMIDITY 28. PCT		ABS. HUMIDITY 6.3 GM/KG	NOX HUMIDITY CORRECTION FACTOR .87
BAG RESULTS		NYCC	
TEST CYCLE			
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)		46.7 (116.0)	
BLOWER REVOLUTIONS		5857.	
TOT FLOW STD. CU. METRES(SCF)		116.2 (4105.)	
THC SAMPLE METER/RANGE/PPM		16.6/1022/ 17.	
THC BCKGRD METER/RANGE/PPM		9.7/1022/ 10.	
CO SAMPLE METER/RANGE/PPM		24.4/ 12/ 25.	
CO BCKGRD METER/RANGE/PPM		.0/ 12/ 0.	
CO2 SAMPLE METER/RANGE/PCT		53.3/ 14/.3089	
CO2 BCKGRD METER/RANGE/PCT		13.0/ 14/.0456	
NOX SAMPLE METER/RANGE/PPM		27.3/ 1/ 6.9	
NOX BCKGRD METER/RANGE/PPM		.3/ 1/ .0	
DILUTION FACTOR		43.19	
THC CONCENTRATION PPM		7.	
CO CONCENTRATION PPM		24.	
CO2 CONCENTRATION PCT		.2643	
NOX CONCENTRATION PPM		6.8	
FILTER WT. MG (EFFICIENCY, %)		.106 (59.)	
THC MASS GRAMS		.48	
CO MASS GRAMS		3.28	
CO2 MASS GRAMS		562.6	
NOX MASS GRAMS		1.33	
PARTICULATE MASS GRAMS		.08	
RUN TIME SECONDS		598.	
DFC, WET (DRY)		.977 (.968)	
SCF, WET (DRY)		1.000 (.988)	
VOL (SCM)		116.2	
SAM BLR (SCM)		.00	
MI (MEASURED)		1.17	
TEST NUMBER,			
BAROMETER,	MM HG	742.2	
HUMIDITY,	G/KG	6.3	
TEMPERATURE,	DEG C	27.2	
CARBON DIOXIDE,	G/MI	482.4	
FUEL ECONOMY,	MPG	20.8	
HYDROCARBONS, (THC)	G/MI	.41	
CARBON MONOXIDE,	G/MI	2.81	
OXIDES OF NITROGEN,	G/MI	1.14	
PARTICULATES,	G/MI	.068	

TABLE C-31. VOLKSWAGEN WITH FAILED INJECTORS AND TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	5	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/ 8/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1 / CVS NO.	17	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2		ODOMETER 22615. KM(14052. MILES)
BAROMETER	740.66 MM HG(29.16 IN HG)			DRY BULB TEMP.	24.4 DEG C(76.0 DEG F)		
RELATIVE HUMIDITY	32. PCT			ABS. HUMIDITY	6.3 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.87
BAG RESULTS							
DESCRIPTION	BAG NUMBER			1	2	3	4
		COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED		
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)		45.6 (114.0)	45.6 (114.0)	46.7 (116.0)	46.1 (115.0)		
BLOWER REVOLUTIONS		4947.	8513.	4936.	8504.		
TOT FLOW STD. CU. METRES(SCF)		98.3 (3471.)	169.2 (5973.)	97.7 (3451.)	168.6 (5954.)		
THC SAMPLE METER/RANGE/PPM		21.0/1022/ 21.	30.0/1022/ 20.	22.5/1022/ 23.	25.3/1022/ 25.		
THC BCKGRD METER/RANGE/PPM		8.0/1022/ 8.	8.0/1022/ 8.	12.0/1022/ 12.	12.0/1022/ 12.		
CO SAMPLE METER/RANGE/PPM		87.1/ 13/ 87.	32.7/ 13/ 30.	69.1/ 13/ 67.	32.8/ 13/ 30.		
CO BCKGRD METER/RANGE/PPM		4.9/ 13/ 4.	4.1/ 13/ 4.	4.0/ 13/ 4.	3.7/ 13/ 3.		
CO2 SAMPLE METER/RANGE/PCT		74.5/ 11/ .6660	55.1/ 11/ .4374	69.8/ 11/ .6060	54.0/ 11/ .4258		
CO2 BCKGRD METER/RANGE/PCT		9.2/ 11/ .0553	9.2/ 11/ .0553	9.6/ 11/ .0578	9.4/ 11/ .0566		
NOX SAMPLE METER/RANGE/PPM		61.2/ 1/ 15.4	39.3/ 1/ 9.9	53.8/ 1/ 13.5	38.8/ 1/ 9.8		
NOX BCKGRD METER/RANGE/PPM		1.0/ 1/ .3	1.0/ 1/ .3	1.4/ 1/ .4	1.8/ 1/ .5		
DILUTION FACTOR		19.98	30.56	21.99	31.34		
THC CONCENTRATION PPM		13.	12.	11.	14.		
CO CONCENTRATION PPM		81.	26.	62.	26.		
CO2 CONCENTRATION PCT		.6135	.3839	.5508	.3711		
NOX CONCENTRATION PPM		15.1	9.6	13.2	9.3		
FILTER WT. MG (EFFICIENCY, %)		.071 (53.)	.145 (74.)	.084 (57.)	.133 (60.)		
THC MASS GRAMS		.76	1.20	.62	1.33		
CO MASS GRAMS		9.28	5.09	7.06	5.16		
CO2 MASS GRAMS		1104.2	1189.0	995.6	1145.7		
NOX MASS GRAMS		2.48	2.72	2.15	2.62		
PARTICULATE MASS GRAMS		.06	.15	.06	.10		
THC GRAMS/MI		.21	.31	.17	.34		
CO GRAMS/MI		2.57	1.31	1.96	1.33		
CO2 GRAMS/MI		306.1	305.2	273.1	294.3		
NOX GRAMS/MI		.69	.70	.59	.67		
FUEL ECONOMY IN MPG		32.71	32.85	32.98	36.74	35.36	34.18
RUN TIME	SECONDS	504.	868.	503.		868.	
MEASURED DISTANCE	MI	3.61	7.50	3.90	3.61	7.50	3.89
SCF, DRY		.984	.985	.986	.984	.985	.986
DFC, WET (DRY)			.961(.951)			.963(.953)	
TOT VOL (SCM) / SAM BLR (SCM)			267.5/ .00			266.4/ .00	
COMPOSITE RESULTS							
TEST NUMBER	5					3-BAG	(4-BAG)
BAROMETER	MM HG	740.7				CARBON DIOXIDE	G/MI
HUMIDITY	G/KG	6.3				FUEL ECONOMY	MPG
TEMPERATURE	DEG C	24.4				HYDROCARBONS (THC)	G/MI
						CARBON MONOXIDE	G/MI
						OXIDES OF NITROGEN	G/MI
						PARTICULATES	G/MI

TABLE C-32. VOLKSWAGEN WITH FAILED INJECTORS AND TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	5	RUN	2	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/ 8/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6'L(98. CID) L-4				BAG CART NO.	1	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER 22640. KM(14068. MILES)
				CVS NO.	17	
BAROMETER	741.43	MM HG(29.19 IN HG)		DRY BULB TEMP.	27.8 DEG C(82.0 DEG F)	
RELATIVE HUMIDITY	31.	PCT		ABS. HUMIDITY	7.4 GM/KG	NOX HUMIDITY CORRECTION FACTOR .90
BAG RESULTS				HFET		
TEST CYCLE						
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)				46.7 (116.0)		
BLOWER REVOLUTIONS				7499.		
TOT FLOW STD. CU. METRES(SCF)				148.6 (5248.)		
THC SAMPLE METER/RANGE/PPM				24.5/1022/ 24.		
THC BCKGRD METER/RANGE/PPM				14.1/1022/ 14.		
CO SAMPLE METER/RANGE/PPM				53.6/ 13/ 51.		
CO BCKGRD METER/RANGE/PPM				5.1/ 13/ 4.		
CO2 SAMPLE METER/RANGE/PCT				88.2/ 11/ .8611		
CO2 BCKGRD METER/RANGE/PCT				8.8/ 11/ .0527		
NOX SAMPLE METER/RANGE/PPM				84.0/ 1/ 21.1		
NOX BCKGRD METER/RANGE/PPM				1.3/ 1/ .3		
DILUTION FACTOR				15.57		
THC CONCENTRATION PPM				11.		
CO CONCENTRATION PPM				45.		
CO2 CONCENTRATION PCT				.8118		
NOX CONCENTRATION PPM				20.7		
FILTER WT. MG (EFFICIENCY, %)				.150 (71.)		
THC MASS GRAMS				.97		
CO MASS GRAMS				7.79		
CO2 MASS GRAMS				2209.1		
NOX MASS GRAMS				5.31		
PARTICULATE MASS GRAMS				.09		
RUN TIME		SECONDS		766.		
DFC, WET (DRY)				.936 (.926)		
SCF, WET (DRY)				1.000 (.982)		
VOL (SCM)				148.6		
SAM BLR (SCM)				.00		
MI (MEASURED)				10.22		
TEST NUMBER,				5		
BAROMETER,	MM HG			741.4		
HUMIDITY,	G/KG			7.4		
TEMPERATURE,	DEG C			27.8		
CARBON DIOXIDE,	G/MI			216.1		
FUEL ECONOMY,	MPG			46.7		
HYDROCARBONS, (THC)	G/MI			.09		
CARBON MONOXIDE,	G/MI			.76		
OXIDES OF NITROGEN,	G/MI			.52		
PARTICULATES,	G/MI			.009		

TABLE C-33. VOLKSWAGEN WITH FAILED INJECTORS AND TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
NYCC - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	5	RUN	2	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/ 8/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6'L(98. CID) L-4				BAG CART NO.	1	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER 22656. KM(14078. MILES)
				CVS NO.	17	
BAROMETER 741.68 MM HG(29.20 IN HG)				DRY BULB TEMP. 25.6 DEG C(78.0 DEG F)		
RELATIVE HUMIDITY 37. PCT				ABS. HUMIDITY 7.7 GM/KG		
BAG RESULTS				NOX HUMIDITY CORRECTION FACTOR .91		
				NYCC		
TEST CYCLE						
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)				47.8 (118.0)		
BLOWER REVOLUTIONS				5852.		
TOT FLOW STD. CU. METRES(SCF)				115.6 (4083.)		
THC SAMPLE METER/RANGE/PPM				21.0/1022/ 21.		
THC BCKGRD METER/RANGE/PPM				14.0/1022/ 14.		
CO SAMPLE METER/RANGE/PPM				32.2/ 13/ 29.		
CO BCKGRD METER/RANGE/PPM				6.5/ 13/ 6.		
CO2 SAMPLE METER/RANGE/PCT				43.9/ 11/ .3258		
CO2 BCKGRD METER/RANGE/PCT				9.2/ 11/ .0553		
NOX SAMPLE METER/RANGE/PPM				27.7/ 1/ 7.0		
NOX BCKGRD METER/RANGE/PPM				1.3/ 1/ .3		
DILUTION FACTOR				40.87		
THC CONCENTRATION PPM				7.		
CO CONCENTRATION PPM				23.		
CO2 CONCENTRATION PCT				.2719		
NOX CONCENTRATION PPM				6.7		
FILTER WT. MG (EFFICIENCY, %)				.103 (55.)		
THC MASS GRAMS				.49		
CO MASS GRAMS				3.14		
CO2 MASS GRAMS				575.6		
NOX MASS GRAMS				1.34		
PARTICULATE MASS GRAMS				.08		
RUN TIME SECONDS				598.		
DFC, WET (DRY)				.976 (.964)		
SCF, WET (DRY)				1.000 (.985)		
VOL (SCM)				115.6		
SAM BLR (SCM)				.00		
MI (MEASURED)				1.16		
TEST NUMBER,				5		
BAROMETER, MM HG				741.7		
HUMIDITY, G/KG				7.7		
TEMPERATURE, DEG C				25.6		
CARBON DIOXIDE, G/MI				495.2		
FUEL ECONOMY, MPG				20.3		
HYDROCARBONS, (THC) G/MI				.42		
CARBON MONOXIDE, G/MI				2.70		
OXIDES OF NITROGEN, G/MI				1.16		
PARTICULATES, G/MI				.071		

TABLE C-34. VOLKSWAGEN WITH FAILED INJECTORS AND WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	6	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/12/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2 / CVS NO. 17	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	22792. KM(14162. MILES)
BAROMETER 743.97 MM HG(29.29 IN HG)				DRY BULB TEMP. 25.6 DEG C(78.0 DEG F)			
RELATIVE HUMIDITY 14. PCT				ABS. HUMIDITY 2.9 GM/KG		NOX HUMIDITY CORRECTION FACTOR	.79
BAG RESULTS							
BAG NUMBER				1	2	3	4
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				42.8 (109.0)	43.3 (110.0)	43.3 (110.0)	45.0 (113.0)
BLOWER REVOLUTIONS				4939.	8477.	4938.	8482.
TOT FLOW STD. CU. METRES(SCF)				99.5 (3515.)	170.5 (6019.)	99.3 (3507.)	169.7 (5992.)
THC SAMPLE METER/RANGE/PPM				22.0/1022/ 22.	21.3/1022/ 21.	25.0/1022/ 25.	24.9/1022/ 25.
THC BCKGRD METER/RANGE/PPM				6.6/1022/ 7.	6.6/1022/ 7.	7.0/1022/ 7.	7.0/1022/ 7.
CO SAMPLE METER/RANGE/PPM				52.0/ 12/ 52.	25.8/ 12/ 26.	43.7/ 12/ 44.	28.1/ 12/ 28.
CO BCKGRD METER/RANGE/PPM				1.0/ 12/ 1.	.5/ 12/ 1.	.5/ 12/ 1.	.0/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT				79.5/ 14/ .6523	64.6/ 14/ .4326	75.2/ 14/ .5806	63.4/ 14/ .4180
CO2 BCKGRD METER/RANGE/PCT				12.5/ 14/ .0436	12.3/ 14/ .0428	12.4/ 14/ .0432	12.5/ 14/ .0436
NOX SAMPLE METER/RANGE/PPM				77.8/ 1/ 19.5	57.6/ 1/ 14.4	60.4/ 1/ 15.1	43.1/ 1/ 10.8
NOX BCKGRD METER/RANGE/PPM				.4/ 1/ .1	.4/ 1/ .1	.0/ 1/ .0	.0/ 1/ .0
DILUTION FACTOR				20.49	30.91	23.01	31.94
THC CONCENTRATION PPM				16.	15.	18.	18.
CO CONCENTRATION PPM				50.	25.	43.	28.
CO2 CONCENTRATION PCT				.6109	.3912	.5393	.3757
NOX CONCENTRATION PPM				19.4	14.3	15.1	10.8
FILTER WT. MG (EFFICIENCY, %)				2.054 (98.)	2.132 (98.)	1.777 (96.)	1.880 (98.)
THC MASS GRAMS				.90	1.47	1.05	1.77
CO MASS GRAMS				5.82	4.99	4.93	5.51
CO2 MASS GRAMS				1113.4	1220.8	980.7	1167.5
NOX MASS GRAMS				2.93	3.71	2.28	2.79
PARTICULATE MASS GRAMS				.92	.94	.79	.84
THC GRAMS/MI				.25	.37	.29	.45
CO GRAMS/MI				1.60	1.27	1.36	1.41
CO2 GRAMS/MI				306.3	311.7	270.3	298.5
NOX GRAMS/MI				.81	.95	.63	.71
FUEL ECONOMY IN MPG				32.83	32.55	32.29	37.19
RUN TIME SECONDS				504.	868.	505.	868.
MEASURED DISTANCE MI				3.63	7.55	3.92	3.63
SCF, DRY				.990	.991	.992	.990
DFC, WET (DRY)				.9621 (.957)		.964 (.960)	
TOT VOL (SCM) / SAM BLR (SCM)				270.0/ .00		269.0/ .00	
COMPOSITE RESULTS							
TEST NUMBER	6					3-BAG	(4-BAG)
BAROMETER MM HG	744.0					CARBON DIOXIDE	6/MI
HUMIDITY G/KG	2.9						299.2 (295.3)
TEMPERATURE DEG C	25.6					FUEL ECONOMY	MPG
							33.62 (34.04)
						HYDROCARBONS (THC)	6/MI
							.32 (.35)
						CARBON MONOXIDE	6/MI
							1.35 (1.41)
						OXIDES OF NITROGEN	6/MI
							.83 (.76)
						PARTICULATES	6/MI
							.237 (.229)

TABLE C-35. VOLKSWAGEN WITH FAILED INJECTORS AND WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	6	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/12/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	22816. KM(14177. MILES)
BAROMETER	743.20	MM HG(29.26 IN HG)		CVS NO.	17		
RELATIVE HUMIDITY	13.	PCT		DRY BULB TEMP.	26.7 DEG C(80.0 DEG F)		
BAG RESULTS				ABS. HUMIDITY	3.0 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.80
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				45.0 (113.0)			
BLOWER REVOLUTIONS				7490.			
TOT FLOW STD. CU. METRES(SCF)				149.7 (5286.)			
THC SAMPLE METER/RANGE/PPM				28.0/1022/ 28.			
THC BCKGRD METER/RANGE/PPM				7.3/1022/ 7.			
CO SAMPLE METER/RANGE/PPM				33.2/ 12/ 33.			
CO BCKGRD METER/RANGE/PPM				.0/ 12/ 0.			
CO2 SAMPLE METER/RANGE/PCT				88.6/ 14/ .8349			
CO2 BCKGRD METER/RANGE/PCT				12.6/ 14/ .0440			
NOX SAMPLE METER/RANGE/PPM				96.8/ 1/ 24.1			
NOX BCKGRD METER/RANGE/PPM				.6/ 1/ .2			
DILUTION FACTOR				16.07			
THC CONCENTRATION PPM				21.			
CO CONCENTRATION PPM				33.			
CO2 CONCENTRATION PCT				.7936			
NOX CONCENTRATION PPM				24.0			
FILTER WT. MG (EFFICIENCY, %)				2.293 (97.)			
THC MASS GRAMS				1.83			
CO MASS GRAMS				5.69			
CO2 MASS GRAMS				2175.1			
NOX MASS GRAMS				5.47			
PARTICULATE MASS GRAMS				1.01			
RUN TIME		SECONDS		765.			
DFC, WET (DRY)				.938 (.934)			
SCF, WET (DRY)				1.000 (.988)			
VOL (SCM)				149.7			
SAM BLR (SCM)				.00			
MI (MEASURED)				10.33			
TEST NUMBER,				6			
BAROMETER,		MM HG		743.2			
HUMIDITY,		G/KG		3.0			
TEMPERATURE,		DEG C		26.7			
CARBON DIOXIDE,		G/MI		210.5			
FUEL ECONOMY,		MPG		48.0			
HYDROCARBONS, (THC)		G/MI		.18			
CARBON MONOXIDE,		G/MI		.55			
OXIDES OF NITROGEN,		G/MI		.53			
PARTICULATES,		G/MI		.098			

TABLE C-36. VOLKSWAGEN WITH FAILED INJECTORS AND WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	6	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/12/88	ACTUAL ROAD LOAD	5.2 KM(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	22833. KM(14188. MILES)
BAROMETER 743.20 MM HG(29.26 IN HG)				CVS NO.	17		
RELATIVE HUMIDITY 13. PCT				DRY BULB TEMP.	26.7 DEG C(80.0 DEG F)		
BAG RESULTS				ABS. HUMIDITY	3.0 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.80
TEST CYCLE				NYCC			
BLOWER DIF P MM. H2O(IN. H2O)					1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)					1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)					45.6 (114.0)		
BLOWER REVOLUTIONS					5863.		
TOT FLOW STD. CU. METRES(SCF)					117.0 (4131.)		
THC SAMPLE METER/RANGE/PPM					17.4/1022/ 17.		
THC BCKGRD METER/RANGE/PPM					7.5/1022/ 8.		
CO SAMPLE METER/RANGE/PPM					21.4/ 12/ 22.		
CO BCKGRD METER/RANGE/PPM					.0/ 12/ 0.		
CO2 SAMPLE METER/RANGE/PCT					51.9/ 14/ .2955		
CO2 BCKGRD METER/RANGE/PCT					12.8/ 14/ .0448		
NOX SAMPLE METER/RANGE/PPM					28.5/ 1/ 7.2		
NOX BCKGRD METER/RANGE/PPM					.5/ 1/ .1		
DILUTION FACTOR					45.15		
THC CONCENTRATION PPM					10.		
CO CONCENTRATION PPM					21.		
CO2 CONCENTRATION PCT					.2517		
NOX CONCENTRATION PPM					7.1		
FILTER WT. MG (EFFICIENCY, %)					.904 (94.)		
THC MASS GRAMS					.68		
CO MASS GRAMS					2.91		
CO2 MASS GRAMS					539.2		
NOX MASS GRAMS					1.26		
PARTICULATE MASS GRAMS					.43		
RUN TIME		SECONDS			599.		
DFC, WET (DRY)					.978 (.974)		
SCF, WET (DRY)					1.000 (.993)		
VOL (SCM)					117.0		
SAM BLR (SCM)					.00		
MI (MEASURED)					1.16		
TEST NUMBER,					6		
BAROMETER,	MM HG				743.2		
HUMIDITY,	G/KG				3.0		
TEMPERATURE,	DEG C				26.7		
CARBON DIOXIDE,	G/MI				464.2		
FUEL ECONOMY,	MPG				21.6		
HYDROCARBONS, (THC)	G/MI				.58		
CARBON MONOXIDE,	G/MI				2.51		
OXIDES OF NITROGEN,	G/MI				1.09		
PARTICULATES,	G/MI				.367		

TABLE C-37. VOLKSWAGEN WITH FAILED INJECTORS AND WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	6	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG (2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/13/88	ACTUAL ROAD LOAD	5.2 KW (7.0 HP)
ENGINE 1.6'L (98. CID) L-4				BAG CART NO.	2 / CVS NO. 17	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	22835. KM (14189. MILES)
BAROMETER	743.46	MM HG (29.27 IN HG)		DRY BULB TEMP.	26.1 DEG C (79.0 DEG F)		
RELATIVE HUMIDITY	12.	PCT		ABS. HUMIDITY	2.6 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.79
BAG RESULTS							
BAG NUMBER				1	2	3	4
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				43.3 (110.0)	44.4 (112.0)	43.9 (111.0)	45.0 (113.0)
BLOWER REVOLUTIONS				4940.	8480.	4938.	8500.
TOT FLOW STD. CU. METRES(SCF)				99.3 (3507.)	169.8 (5996.)	99.1 (3499.)	170.0 (6002.)
THC SAMPLE METER/RANGE/PPM				29.7/1022/ 30.	26.6/1022/ 27.	27.9/1022/ 28.	27.5/1022/ 28.
THC BCKGRD METER/RANGE/PPM				10.2/1022/ 10.	10.2/1022/ 10.	11.2/1022/ 11.	11.2/1022/ 11.
CO SAMPLE METER/RANGE/PPM				54.5/ 12/ 55.	26.9/ 12/ 27.	43.0/ 12/ 43.	26.0/ 12/ 26.
CO BCKGRD METER/RANGE/PPM				.9/ 12/ 1.	.6/ 12/ 1.	1.4/ 12/ 1.	1.2/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT				79.9/ 14/ .6594	64.3/ 14/ .4289	75.8/ 14/ .5901	62.2/ 14/ .4037
CO2 BCKGRD METER/RANGE/PCT				15.4/ 14/ .0557	15.2/ 14/ .0548	14.9/ 14/ .0535	14.8/ 14/ .0531
NOX SAMPLE METER/RANGE/PPM				67.3/ 1/ 16.9	41.9/ 1/ 10.5	57.6/ 1/ 14.4	39.9/ 1/ 10.0
NOX BCKGRD METER/RANGE/PPM				.9/ 1/ .2	.7/ 1/ .2	.4/ 1/ .1	.8/ 1/ .2
DILUTION FACTOR				20.24	31.13	22.64	33.04
THC CONCENTRATION PPM				20.	17.	17.	17.
CO CONCENTRATION PPM				53.	26.	41.	25.
CO2 CONCENTRATION PCT				.6065	.3758	.5390	.3522
NOX CONCENTRATION PPM				16.6	10.3	14.3	9.8
FILTER WT. MG (EFFICIENCY, %)				2.278 (98.)	1.911 (98.)	1.724 (98.)	1.923 (99.)
THC MASS GRAMS				1.15	1.64	.98	1.64
CO MASS GRAMS				6.11	5.17	4.74	4.88
CO2 MASS GRAMS				1102.7	1168.4	977.7	1096.1
NOX MASS GRAMS				2.50	2.65	2.15	2.52
PARTICULATE MASS GRAMS				1.02	.84	.76	.83
THC GRAMS/MI				.31	.42	.27	.42
CO GRAMS/MI				1.68	1.32	1.30	1.24
CO2 GRAMS/MI				302.6	297.7	268.3	278.9
NOX GRAMS/MI				.69	.68	.59	.64
FUEL ECONOMY IN MPG				33.20	33.49	33.76	36.49
RUN TIME	SECONDS			504.	868.	504.	868.
MEASURED DISTANCE	MI			3.64	7.57	3.92	3.64
SCF, DRY				.990	.991	.992	.991
DFC, WET (DRY)					.962 (.958)		.9651 (.961)
TOT VOL (SCM) / SAM BLR (SCM)					269.1/ .00		269.1/ .00
COMPOSITE RESULTS						3-BAG	(4-BAG)
TEST NUMBER	6					CARBON DIOXIDE	6/MI
BAROMETER	MM HG	743.5					290.7 (285.1)
HUMIDITY	G/KG	2.6				FUEL ECONOMY	MPG
TEMPERATURE	DEG C	26.1				HYDROCARBONS (THC)	6/MI
						CARBON MONOXIDE	6/MI
						OXIDES OF NITROGEN	6/MI
						PARTICULATES	6/MI
							.225 (.225)

TABLE C-38. VOLKSWAGEN WITH FAILED INJECTORS AND WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	6	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/13/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	22861. KM(14205. MILES)
BAROMETER 742.95 MM HG(29.25 IN HG)				CVS NO.	17		
RELATIVE HUMIDITY 19. PCT				DRY BULB TEMP.	25.6 DEG C(78.0 DEG F)		
BAG RESULTS				ABS. HUMIDITY	4.0 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.82
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0	(70.0)		
BLOWER INLET P MM. H2O(IN. H2O)				1778.0	(70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)				45.0	(113.0)		
BLOWER REVOLUTIONS				7492.			
TOT FLOW STD. CU. METRES(SCF)				149.7	(5285.)		
THC SAMPLE METER/RANGE/PPM				26.4/1022/	26.		
THC BCKGRD METER/RANGE/PPM				8.6/1022/	9.		
CO SAMPLE METER/RANGE/PPM				32.3/	12/ 32.		
CO BCKGRD METER/RANGE/PPM				.5/	12/ 1.		
CO2 SAMPLE METER/RANGE/PCT				89.0/	14/ .8441		
CO2 BCKGRD METER/RANGE/PCT				12.4/	14/ .0432		
NOX SAMPLE METER/RANGE/PPM				93.7/	1/ 23.4		
NOX BCKGRD METER/RANGE/PPM				.7/	1/ .2		
DILUTION FACTOR				15.91			
THC CONCENTRATION PPM				18.			
CO CONCENTRATION PPM				31.			
CO2 CONCENTRATION PCT				.8036			
NOX CONCENTRATION PPM				23.2			
FILTER WT. MG (EFFICIENCY, %)				2.403	(97.)		
THC MASS GRAMS				1.58			
CO MASS GRAMS				5.44			
CO2 MASS GRAMS				2201.9			
NOX MASS GRAMS				5.44			
PARTICULATE MASS GRAMS				1.04			
RUN TIME		SECONDS		766.			
DFC, WET (DRY)				.937	(.931)		
SCF, WET (DRY)				1.000	(.986)		
VOL (SCM)				149.7			
SAM BLR (SCM)				.00			
MI (MEASURED)				10.32			
TEST NUMBER,				6			
BAROMETER,	MM HG			743.0			
HUMIDITY,	G/KG			4.0			
TEMPERATURE,	DEG C			25.6			
CARBON DIOXIDE,	G/MI			213.3			
FUEL ECONOMY,	MPG			47.4			
HYDROCARBONS, (THC)	G/MI			.15			
CARBON MONOXIDE,	G/MI			.53			
OXIDES OF NITROGEN,	G/MI			.53			
PARTICULATES,	G/MI			.101			

TABLE C-39. VOLKSWAGEN WITH FAILED INJECTORS AND WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	6	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0 VM JETTA	DATE	4/13/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)	DIESEL	EM-619-F
ENGINE 1.6 L(98. CID) L-4		BAG CART NO.	2	ODOMETER	22878. KM(14216. MILES)		
TRANSMISSION A3		DYNO NO.	2				
BAROMETER 742.95 MM HG(29.25 IN HG)		CVS NO.	17				
RELATIVE HUMIDITY 19. PCT		DRY BULB TEMP. 25.6 DEG C(78.0 DEG F)					
BAG RESULTS		ABS. HUMIDITY 4.0 GM/KG					
TEST CYCLE		NOX HUMIDITY CORRECTION FACTOR .82					
BLOWER DIF P MM. H2O(IN. H2O)		NYCC					
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)					
BLOWER INLET TEMP. DEG. C(DEG. F)		1778.0 (70.0)					
BLOWER REVOLUTIONS		46.1 (115.0)					
TOT FLOW STD. CU. METRES(SCF)		5854.					
THC SAMPLE METER/RANGE/PPM		116.5 (4115.)					
THC BCKGRD METER/RANGE/PPM		16.7/1022/ 17.					
CO SAMPLE METER/RANGE/PPM		7.1/1022/ 7.					
CO BCKGRD METER/RANGE/PPM		23.2/ 12/ 23.					
CO2 SAMPLE METER/RANGE/PCT		.1/ 12/ 0.					
CO2 BCKGRD METER/RANGE/PCT		52.5/ 14/ .3012					
NOX SAMPLE METER/RANGE/PPM		12.8/ 14/ .0448					
NOX BCKGRD METER/RANGE/PPM		28.3/ 1/ 7.2					
DILUTION FACTOR		1.0/ 1/ .3					
THC CONCENTRATION PPM		44.29					
CO CONCENTRATION PPM		10.					
CO2 CONCENTRATION PCT		23.					
NOX CONCENTRATION PPM		.2574					
FILTER WT. MG (EFFICIENCY, %)		6.9					
THC MASS GRAMS		1.073 (99.)					
CO MASS GRAMS		.66					
CO2 MASS GRAMS		3.12					
NOX MASS GRAMS		549.2					
PARTICULATE MASS GRAMS		1.26					
RUN TIME	SECONDS	.48					
DFC, WET (DRY)		599.					
SCF, WET (DRY)		.977 (.971)					
VOL (SCM)		1.000 (.991)					
SAM BLR (SCM)		116.5					
MI (MEASURED)		.00					
		1.18					
TEST NUMBER,		6					
BAROMETER,	MM HG	743.0					
HUMIDITY,	G/KG	4.0					
TEMPERATURE,	DEG C	25.6					
CARBON DIOXIDE,	G/MI	466.3					
FUEL ECONOMY,	MPG	21.5					
HYDROCARBONS, (THC)	G/MI	.56					
CARBON MONOXIDE,	G/MI	2.65					
OXIDES OF NITROGEN,	G/MI	1.07					
PARTICULATES,	G/MI	.407					

TABLE C-40. VOLKSWAGEN BASELINE WITH TRAP , FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	1	RUN	5	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/19/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER 23080. KM(14341. MILES)
				CVS NO.	17	
BAROMETER 741.93 MM HG(29.21 IN HG)				DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)		
RELATIVE HUMIDITY 27. PCT				ABS. HUMIDITY 5.4 GM/KG		NOX HUMIDITY CORRECTION FACTOR .85
BAG RESULTS						
BAG NUMBER		1		2		3
DESCRIPTION		COLD TRANSIENT		STABILIZED		HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)		1778.0 (70.0)		1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)		1778.0 (70.0)		1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)		42.2 (108.0)		43.3 (110.0)		41.7 (107.0)
BLOWER REVOLUTIONS		4943.		8508.		4940.
TOT FLOW STD. CU. METRES(SCF)		99.4 (3510.)		170.6 (6023.)		99.5 (3512.)
THC SAMPLE METER/RANGE/PPM		13.6/1022/ 14.		12.0/1022/ 12.		12.1/1022/ 12.
THC BCKGRD METER/RANGE/PPM		5.7/1022/ 6.		5.7/1022/ 6.		5.0/1022/ 5.
CO SAMPLE METER/RANGE/PPM		41.4/ 12/ 41.		22.4/ 12/ 23.		29.1/ 12/ 29.
CO BCKGRD METER/RANGE/PPM		1.0/ 12/ 1.		.8/ 12/ 1.		.5/ 12/ 1.
CO2 SAMPLE METER/RANGE/PCT		79.4/ 14/ .6506		62.6/ 14/ .4084		74.9/ 14/ .5759
CO2 BCKGRD METER/RANGE/PCT		12.6/ 14/ .0440		12.6/ 14/ .0440		12.8/ 14/ .0448
NOX SAMPLE METER/RANGE/PPM		67.6/ 1/ 16.9		45.6/ 1/ 11.4		60.9/ 1/ 15.3
NOX BCKGRD METER/RANGE/PPM		.6/ 1/ .2		.6/ 1/ .2		.4/ 1/ .1
DILUTION FACTOR		20.61		32.82		23.31
THC CONCENTRATION PPM		8.		6.		7.
CO CONCENTRATION PPM		40.		21.		28.
CO2 CONCENTRATION PCT		.6087		.3658		.5330
NOX CONCENTRATION PPM		16.8		11.3		15.2
FILTER WT. MG (EFFICIENCY, %)		.276 (62.)		.245 (62.)		.140 (52.)
THC MASS GRAMS		.47		.64		.42
CO MASS GRAMS		4.59		4.25		3.26
CO2 MASS GRAMS		1107.7		1142.3		970.5
NOX MASS GRAMS		2.72		3.14		2.46
PARTICULATE MASS GRAMS		.20		.17		.12
THC GRAMS/MI		.13		.16		.11
CO GRAMS/MI		1.26		1.09		.90
CO2 GRAMS/MI		304.7		293.8		266.8
NOX GRAMS/MI		.75		.81		.68
FUEL ECONOMY IN MPG		33.10		34.35		37.85
RUN TIME SECONDS		504.		868.		504.
MEASURED DISTANCE MI		3.64		3.89		3.64
SCF, DRY		.985		.988		.986

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG	741.9		
HUMIDITY G/KG	5.4		
TEMPERATURE DEG C	25.0		
CARBON DIOXIDE G/MI	288.6	(.0)	
FUEL ECONOMY MPG	34.97	(.00)	
HYDROCARBONS (THC) G/MI	.14	(.00)	
CARBON MONOXIDE G/MI	1.07	(.00)	
OXIDES OF NITROGEN G/MI	.76	(.00)	
PARTICULATES G/MI	.043	(.000)	

TABLE C-41. VOLKSWAGEN BASELINE WITH TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	1	RUN	6	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	4/27/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23112. KM(14361. MILES)
				CVS NO.	17		
BAROMETER	742.44	MM HG(29.23 IN HG)		DRY BULB TEMP.	26.7 DEG C(80.0 DEG F)		
RELATIVE HUMIDITY	35.	PCT		ABS. HUMIDITY	7.9 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.91
BAG RESULTS							
BAG NUMBER				1	2	3	
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)				46.7 (116.0)	47.2 (117.0)	46.1 (115.0)	
BLOWER REVOLUTIONS				4950.	8506.	4944.	
TOT FLOW STD. CU. METRES(SCF)				98.3 (3471.)	168.6 (5955.)	98.4 (3473.)	
THC SAMPLE METER/RANGE/PPM				13.6/1022/ 14.	10.4/1022/ 10.	11.5/1022/ 11.	
THC BCKGRD METER/RANGE/PPM				5.6/1022/ 6.	5.6/1022/ 6.	5.2/1022/ 5.	
CO SAMPLE METER/RANGE/PPM				34.6/ 12/ 35.	22.9/ 12/ 23.	29.8/ 12/ 30.	
CO BCKGRD METER/RANGE/PPM				.5/ 12/ 1.	.4/ 12/ 0.	.1/ 12/ 0.	
CO2 SAMPLE METER/RANGE/PCT				79.2/ 14/ .6471	63.2/ 14/ .4156	75.3/ 14/ .5822	
CO2 BCKGRD METER/RANGE/PCT				13.1/ 14/ .0460	13.0/ 14/ .0456	12.8/ 14/ .0448	
NOX SAMPLE METER/RANGE/PPM				62.9/ 1/ 15.8	43.3/ 1/ 10.9	57.2/ 1/ 14.3	
NOX BCKGRD METER/RANGE/PPM				.4/ 1/ .1	.4/ 1/ .1	.4/ 1/ .1	
DILUTION FACTOR				20.74	32.27	23.06	
THC CONCENTRATION PPM				8.	5.	7.	
CO CONCENTRATION PPM				33.	22.	29.	
CO2 CONCENTRATION PCT				.6033	.3714	.5393	
NOX CONCENTRATION PPM				15.7	10.8	14.2	
FILTER WT. MG (EFFICIENCY, %)				.172 (63.)	.178 (68.)	.128 (57.)	
THC MASS GRAMS				.47	.48	.37	
CO MASS GRAMS				3.82	4.37	3.34	
CO2 MASS GRAMS				1085.6	1146.6	971.1	
NOX MASS GRAMS				2.69	3.17	2.45	
PARTICULATE MASS GRAMS				.22	.11	.10	
THC GRAMS/MI				.13	.12	.10	
CO GRAMS/MI				1.06	1.12	.92	
CO2 GRAMS/MI				301.4	293.1	268.6	
NOX GRAMS/MI				.75	.81	.68	
FUEL ECONOMY IN MPG				33.50	34.43	37.60	
RUN TIME		SECONDS		506.	868.	505.	
MEASURED DISTANCE		MI		3.60	3.91	3.62	
SCF, DRY				.983	.985	.983	
COMPOSITE RESULTS						3-BAG	(4-BAG)
TEST NUMBER				CARBON DIOXIDE	6/MI	288.1	(.0)
BAROMETER	MM HG	742.4		FUEL ECONOMY	MPG	35.04	(.00)
HUMIDITY	G/KG	7.9		HYDROCARBONS (THC)	6/MI	.12	(.00)
TEMPERATURE	DEG C	26.7		CARBON MONOXIDE	6/MI	1.05	(.00)
				OXIDES OF NITROGEN	6/MI	.76	(.00)
				PARTICULATES	6/MI	.035	(.000)

TABLE C-42. VOLKSWAGEN BASELINE WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	1	RUN 6	VEHICLE NO.		TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA	DATE	4/18/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6'L(98. CID) L-4			BAG CART NO.	2	DIESEL EM-619-F
TRANSMISSION A3			DYNO NO.	2	ODOMETER 22980. KM(14279. MILES)
BAROMETER 736.85 MM HG(29.01 IN HG)			CVS NO.	17	
RELATIVE HUMIDITY 34. PCT			DRY BULB TEMP.	23.3 DEG C(74.0 DEG F)	
BAG RESULTS			ABS. HUMIDITY	6.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR .87
BAG NUMBER					
DESCRIPTION			1	2	3
			COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM. H2O(IN. H2O)			1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)			1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)			43.3 (110.0)	43.3 (110.0)	39.4 (103.0)
BLOWER REVOLUTIONS			4941.	8495.	4939.
TOT FLOW STD. CU. METRES(SCF)			98.2 (3466.)	168.7 (5958.)	99.0 (3497.)
THC SAMPLE METER/RANGE/PPM			22.8/1022/ 23.	19.2/1022/ 19.	18.0/1022/ 18.
THC BCKGRD METER/RANGE/PPM			6.4/1022/ 6.	6.4/1022/ 6.	5.2/1022/ 5.
CO SAMPLE METER/RANGE/PPM			33.6/ 12/ 34.	25.1/ 12/ 25.	27.0/ 12/ 27.
CO BCKGRD METER/RANGE/PPM			1.5/ 12/ 2.	1.0/ 12/ 1.	.1/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT			78.2/ 14/ .6298	61.2/ 14/ .3922	73.6/ 14/ .5558
CO2 BCKGRD METER/RANGE/PCT			12.6/ 14/ .0440	12.3/ 14/ .0428	11.6/ 14/ .0400
NOX SAMPLE METER/RANGE/PPM			65.9/ 1/ 16.5	43.0/ 1/ 10.8	60.6/ 1/ 15.2
NOX BCKGRD METER/RANGE/PPM			.5/ 1/ .1	.6/ 1/ .2	.3/ 1/ .1
DILUTION FACTOR			21.28	34.09	24.13
THC CONCENTRATION PPM			17.	13.	13.
CO CONCENTRATION PPM			32.	24.	26.
CO2 CONCENTRATION PCT			.5879	.3506	.5175
NOX CONCENTRATION PPM			16.4	10.6	15.1
FILTER WT. MG (EFFICIENCY, %)			1.941 (91.)	1.588 (92.)	1.350 (92.)
THC MASS GRAMS			.94	1.26	.74
CO MASS GRAMS			3.60	4.68	3.05
CO2 MASS GRAMS			1056.5	1083.3	938.2
NOX MASS GRAMS			2.68	2.99	2.49
PARTICULATE MASS GRAMS			.94	.77	.65
THC GRAMS/MI			.26	.32	.20
CO GRAMS/MI			.99	1.19	.84
CO2 GRAMS/MI			291.4	276.0	258.5
NOX GRAMS/MI			.74	.76	.69
FUEL ECONOMY IN MPG			34.60	36.45	39.04
RUN TIME SECONDS			504.	867.	504.
MEASURED DISTANCE MI			3.63	3.92	3.63
SCF, DRY			.983	.986	.984
COMPOSITE RESULTS					
TEST NUMBER					3-BAG (4-BAG)
BAROMETER MM HG	736.9		CARBON DIOXIDE	6/MI	274.4 (.0)
HUMIDITY G/KG	6.2		FUEL ECONOMY	MPG	36.71 (.00)
TEMPERATURE DEG C	23.3		HYDROCARBONS (THC)	6/MI	.28 (.00)
			CARBON MONOXIDE	6/MI	1.05 (.00)
			OXIDES OF NITROGEN	6/MI	.74 (.00)
			PARTICULATES	6/MI	.204 (.000)

TABLE C-43. VOLKSWAGEN WITH RETARDED TIMING AND TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	7	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	5/ 6/88	ACTUAL ROAD LOAD	5.2 KM(7.0 HP)
ENGINE 1.6'L(98. CID) L-4				BAG CART NO.	1 / CVS NO.	17	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2		ODOMETER 23163. KM(14393. MILES)
BAROMETER 743.97 MM HG(29.29 IN HG)				DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)			
RELATIVE HUMIDITY 55. PCT				ABS. HUMIDITY 12.7 GM/KG			NOX HUMIDITY CORRECTION FACTOR 1.07
BAG RESULTS							
BAG NUMBER				1	2	3	4
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				43.3 (110.0)	43.9 (111.0)	44.4 (112.0)	45.6 (114.0)
BLOWER REVOLUTIONS				4956.	8501.	4977.	8498.
TOT FLOW STD. CU. METRES(SCF)				99.7 (3521.)	170.7 (6029.)	99.8 (3526.)	169.8 (5996.)
THC SAMPLE METER/RANGE/PPM				39.9/1022/ 40.	30.7/1022/ 31.	30.5/1022/ 30.	31.0/1022/ 31.
THC BCKGRD METER/RANGE/PPM				7.6/1022/ 8.	7.6/1022/ 8.	8.0/1022/ 8.	8.0/1022/ 8.
CO SAMPLE METER/RANGE/PPM				61.9/ 13/ 59.	37.1/ 13/ 34.	47.1/ 13/ 44.	36.6/ 13/ 34.
CO BCKGRD METER/RANGE/PPM				1.8/ 13/ 2.	1.4/ 13/ 1.	1.2/ 13/ 1.	1.0/ 13/ 1.
CO2 SAMPLE METER/RANGE/PCT				73.0/ 11/ .6465	52.6/ 11/ .4113	64.6/ 11/ .5433	51.8/ 11/ .4031
CO2 BCKGRD METER/RANGE/PCT				7.3/ 11/ .0433	7.3/ 11/ .0433	7.5/ 11/ .0446	7.5/ 11/ .0446
NOX SAMPLE METER/RANGE/PPM				49.8/ 1/ 12.5	34.5/ 1/ 8.7	42.5/ 1/ 10.7	32.0/ 1/ 8.1
NOX BCKGRD METER/RANGE/PPM				.4/ 1/ .1	.3/ 1/ .1	.8/ 1/ .2	.4/ 1/ .1
DILUTION FACTOR				20.60	32.36	24.55	33.01
THC CONCENTRATION PPM				33.	23.	23.	23.
CO CONCENTRATION PPM				56.	32.	42.	32.
CO2 CONCENTRATION PCT				.6053	.3693	.5005	.3599
NOX CONCENTRATION PPM				12.4	8.6	10.5	8.0
FILTER WT. MG (EFFICIENCY, %)				.353 (62.)	.401 (68.)	.297 (56.)	.410 (66.)
THC MASS GRAMS				1.88	2.30	1.31	2.28
CO MASS GRAMS				6.49	6.37	4.85	6.31
CO2 MASS GRAMS				1105.2	1154.4	914.9	1118.8
NOX MASS GRAMS				2.53	3.01	2.14	2.77
PARTICULATE MASS GRAMS				.25	.25	.23	.27
THC GRAMS/MI				.52	.59	.36	.59
CO GRAMS/MI				1.78	1.63	1.35	1.62
CO2 GRAMS/MI				304.0	295.3	254.2	287.7
NOX GRAMS/MI				.70	.77	.59	.71
FUEL ECONOMY IN MPG				32.96	33.45	33.91	39.49
RUN TIME		SECONDS		505.	868.	506.	867.
MEASURED DISTANCE		MI		3.64	7.54	3.91	3.60
SCF, DRY				.977	.978	.979	.977
DFC, WET (DRY)				.9631 (.946)			.9661 (.949)
TOT VOL (SCM) / SAM BLR (SCM)				270.5/ .00			269.7/ .00
COMPOSITE RESULTS							
TEST NUMBER	7					3-BAG	(4-BAG)
BAROMETER	MM HG	744.0				CARBON DIOXIDE	6/MI
HUMIDITY	G/KG	12.7				FUEL ECONOMY	MPG
TEMPERATURE	DEG C	27.2				HYDROCARBONS (THC)	6/MI
						CARBON MONOXIDE	6/MI
						OXIDES OF NITROGEN	6/MI
						PARTICULATES	6/MI

TABLE C-44. VOLKSWAGEN WITH RETARDED TIMING AND TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	7	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	5/ 6/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23189. KM(14409. MILES)
BAROMETER	743.97	MM HG(29.29 IN HG)		CVS NO.	17		
RELATIVE HUMIDITY	49.	PCT		DRY BULB TEMP.	27.8 DEG C(82.0 DEG F)		
BAG RESULTS				ABS. HUMIDITY	11.6 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.03
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				46.1 (115.0)			
BLOWER REVOLUTIONS				7494.			
TOT FLOW STD. CU. METRES(SCF)				149.5 (5278.)			
THC SAMPLE METER/RANGE/PPM				26.7/1022/ 27.			
THC BCKGRD METER/RANGE/PPM				8.1/1022/ 8.			
CO SAMPLE METER/RANGE/PPM				51.8/ 13/ 49.			
CO BCKGRD METER/RANGE/PPM				1.0/ 13/ 1.			
CO2 SAMPLE METER/RANGE/PCT				90.2/ 11/ .8925			
CO2 BCKGRD METER/RANGE/PCT				7.3/ 11/ .0433			
NOX SAMPLE METER/RANGE/PPM				73.8/ 1/ 18.5			
NOX BCKGRD METER/RANGE/PPM				1.0/ 1/ .3			
DILUTION FACTOR				15.02			
THC CONCENTRATION PPM				19.			
CO CONCENTRATION PPM				46.			
CO2 CONCENTRATION PCT				.8520			
NOX CONCENTRATION PPM				18.3			
FILTER WT. MG (EFFICIENCY, %)				.530 (67.)			
THC MASS GRAMS				1.66			
CO MASS GRAMS				8.05			
CO2 MASS GRAMS				2331.7			
NOX MASS GRAMS				5.39			
PARTICULATE MASS GRAMS				.33			
RUN TIME	SECONDS			765.			
DFC, WET (DRY)				.933 (.919)			
SCF, WET (DRY)				1.000 (.976)			
VOL (SCM)				149.5			
SAM BLR (SCM)				.00			
MI (MEASURED)				10.24			
TEST NUMBER,				7			
BAROMETER,	MM HG			744.0			
HUMIDITY,	G/KG			11.6			
TEMPERATURE,	DEG C			27.8			
CARBON DIOXIDE,	G/MI			227.6			
FUEL ECONOMY,	MPG			44.3			
HYDROCARBONS, (THC)	G/MI			.16			
CARBON MONOXIDE,	G/MI			.79			
OXIDES OF NITROGEN,	G/MI			.53			
PARTICULATES,	G/MI			.032			

TABLE C-45. VOLKSWAGEN WITH RETARDED TIMING AND TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	7	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	5/ 6/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23205. KM(14419. MILES)
BAROMETER	743.71	MM HG(29.28 IN HG)		CVS NO.	17		
RELATIVE HUMIDITY	49.	PCT		DRY BULB TEMP.	28.3 DEG C(83.0 DEG F)		
BAG RESULTS				ABS. HUMIDITY	12.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.05
TEST CYCLE				NYCC			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				46.7 (116.0)			
BLOWER REVOLUTIONS				5857.			
TOT FLOW STD. CU. METRES(SCF)				116.6 (4116.)			
THC SAMPLE METER/RANGE/PPM				23.7/1022/ 24.			
THC BCKGRD METER/RANGE/PPM				7.7/1022/ 8.			
CO SAMPLE METER/RANGE/PPM				33.9/ 13/ 31.			
CO BCKGRD METER/RANGE/PPM				.8/ 13/ 1.			
CO2 SAMPLE METER/RANGE/PCT				41.0/ 11/ .2990			
CO2 BCKGRD METER/RANGE/PCT				7.5/ 11/ .0446			
NOX SAMPLE METER/RANGE/PPM				22.8/ 1/ 5.8			
NOX BCKGRD METER/RANGE/PPM				1.2/ 1/ .3			
DILUTION FACTOR				44.41			
THC CONCENTRATION PPM				16.			
CO CONCENTRATION PPM				30.			
CO2 CONCENTRATION PCT				.2554			
NOX CONCENTRATION PPM				5.5			
FILTER WT. MG (EFFICIENCY, %)				.148 (53.)			
THC MASS GRAMS				1.09			
CO MASS GRAMS				4.02			
CO2 MASS GRAMS				545.1			
NOX MASS GRAMS				1.28			
PARTICULATE MASS GRAMS				.12			
RUN TIME		SECONDS		598.			
DFC, WET (DRY)				.977 (.962)			
SCF, WET (DRY)				1.000 (.981)			
VOL (SCM)				116.6			
SAM BLR (SCM)				.00			
MI (MEASURED)				1.16			
TEST NUMBER,				7			
BAROMETER,	MM HG			743.7			
HUMIDITY,	G/KG			12.2			
TEMPERATURE,	DEG C			28.3			
CARBON DIOXIDE,	G/MI			471.9			
FUEL ECONOMY,	MPG			21.2			
HYDROCARBONS, (THC)	G/MI			.94			
CARBON MONOXIDE,	G/MI			3.48			
OXIDES OF NITROGEN,	G/MI			1.11			
PARTICULATES,	G/MI			.105			

TABLE C-46. VOLKSWAGEN WITH RETARDED TIMING AND TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 7	RUN 2	VEHICLE NO.	TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL 0 VW JETTA		DATE 5/ 9/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4		BAG CART NO. 2 / CVS NO. 17	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 23236. KM(14438. MILES)
BAROMETER 740.66 MM HG(29.16 IN HG)		DRY BULB TEMP. 28.3 DEG C(83.0 DEG F)	
RELATIVE HUMIDITY 62. PCT		ABS. HUMIDITY 15.5 GM/KG	NOX HUMIDITY CORRECTION FACTOR 1.19
BAG RESULTS			
BAG NUMBER	1	2	3
DESCRIPTION	COLD TRANSIENT	STABILIZED	HOT TRANSIENT
BLOWER DIF P MM, H2O(IN, H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM, H2O(IN, H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	47.2 (117.0)	47.2 (117.0)	46.7 (116.0)
BLOWER REVOLUTIONS	4962.	8499.	4966.
TOT FLOW STD. CU. METRES(SCF)	98.1 (3463.)	168.0 (5931.)	98.3 (3471.)
THC SAMPLE METER/RANGE/PPM	44.4/1022/ 44.	32.9/1022/ 33.	32.4/1022/ 32.
THC BCKGRD METER/RANGE/PPM	7.5/1022/ 8.	7.5/1022/ 8.	8.4/1022/ 8.
CO SAMPLE METER/RANGE/PPM	57.1/ 12/ 57.	36.1/ 12/ 36.	49.8/ 12/ 50.
CO BCKGRD METER/RANGE/PPM	.4/ 12/ 0.	.3/ 12/ 0.	.4/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT	79.4/ 14/ .6506	63.9/ 14/ .4240	76.3/ 14/ .5982
CO2 BCKGRD METER/RANGE/PCT	12.2/ 14/ .0424	12.3/ 14/ .0428	12.2/ 14/ .0424
NOX SAMPLE METER/RANGE/PPM	48.0/ 1/ 12.0	33.4/ 1/ 8.4	45.7/ 1/ 11.5
NOX BCKGRD METER/RANGE/PPM	.2/ 1/ .0	.5/ 1/ .1	.5/ 1/ .1
DILUTION FACTOR	20.46	31.38	22.30
THC CONCENTRATION PPM	37.	26.	24.
CO CONCENTRATION PPM	55.	35.	48.
CO2 CONCENTRATION PCT	.6103	.3826	.5577
NOX CONCENTRATION PPM	12.0	8.3	11.3
FILTER WT. MG (EFFICIENCY, %)	.324 (62.)	.400 (67.)	.027 (13.)
THC MASS GRAMS	2.11	2.48	1.38
CO MASS GRAMS	6.28	6.82	5.49
CO2 MASS GRAMS	1095.7	1176.5	1003.7
NOX MASS GRAMS	2.67	3.17	2.53
PARTICULATE MASS GRAMS	.22	.26	.09
THC GRAMS/MI	.58	.64	.38
CO GRAMS/MI	1.74	1.75	1.52
CO2 GRAMS/MI	303.1	301.8	278.7
NOX GRAMS/MI	.74	.81	.70
FUEL ECONOMY IN MPG	33.04	33.10	33.16
RUN TIME SECONDS	506.	866.	507.
MEASURED DISTANCE MI	3.61	7.51	3.90
SCF, DRY	.974	.975	.976
DFC, WET (DRY)	.962(.943)		.963(.944)
TOT VOL (SCM) / SAM BLR (SCM)	266.0/ .00		266.2/ .00

COMPOSITE RESULTS

TEST NUMBER		3-BAG	(4-BAG)
BAROMETER MM HG 740.7	CARBON DIOXIDE G/MI	295.8	(295.3)
HUMIDITY G/KG 15.5	FUEL ECONOMY MPG	33.87	(33.92)
TEMPERATURE DEG C 28.3	HYDROCARBONS (THC) G/MI	.56	(.55)
	CARBON MONOXIDE G/MI	1.69	(1.69)
	OXIDES OF NITROGEN G/MI	.77	(.77)
	PARTICULATES G/MI	.054	(.051)

TABLE C-47. VOLKSWAGEN WITH RETARDED TIMING AND TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
HFET - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	7	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)	
VEHICLE MODEL	0	VW JETTA		DATE	5/ 9/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)	
ENGINE 1.6 L (98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F	
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23260. KM(14453. MILES)	
				CVS NO.	17			
BAROMETER 741.17 MM HG(29.18 IN HG)				DRY BULB TEMP. 27.2 DEG C(81.0 DEG F)				
RELATIVE HUMIDITY 55. PCT				ABS. HUMIDITY 12.7 GM/KG				
BAG RESULTS				NOX HUMIDITY CORRECTION FACTOR 1.07				
TEST CYCLE				HFET				
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)				
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)				
BLOWER INLET TEMP. DEG. C(DEG. F)				47.8 (118.0)				
BLOWER REVOLUTIONS				7494.				
TOT FLOW STD. CU. METRES(SCF)				147.9 (5224.)				
THC SAMPLE METER/RANGE/PPM				30.3/1022/ 30.				
THC BCKGRD METER/RANGE/PPM				9.3/1022/ 9.				
CO SAMPLE METER/RANGE/PPM				50.8/ 12/ 51.				
CO BCKGRD METER/RANGE/PPM				.5/ 12/ 1.				
CO2 SAMPLE METER/RANGE/PCT				90.9/ 14/ .8894				
CO2 BCKGRD METER/RANGE/PCT				12.4/ 14/ .0432				
NOX SAMPLE METER/RANGE/PPM				73.4/ 1/ 18.4				
NOX BCKGRD METER/RANGE/PPM				.5/ 1/ .1				
DILUTION FACTOR				15.06				
THC CONCENTRATION PPM				22.				
CO CONCENTRATION PPM				49.				
CO2 CONCENTRATION PCT				.8491				
NOX CONCENTRATION PPM				18.3				
FILTER WT. MG (EFFICIENCY, %)				.482 (72.)				
THC MASS GRAMS				1.85				
CO MASS GRAMS				8.38				
CO2 MASS GRAMS				2299.9				
NOX MASS GRAMS				5.54				
PARTICULATE MASS GRAMS				.28				
RUN TIME	SECONDS				766.			
DFC, WET (DRY)					.934 (.917)			
SCF, WET (DRY)					1.000 (.974)			
VOL (SCM)					147.9			
SAM BLR (SCM)					.00			
MI (MEASURED)					10.27			
TEST NUMBER,								
BAROMETER,	MM HG				741.2			
HUMIDITY,	G/KG				12.7			
TEMPERATURE,	DEG C				27.2			
CARBON DIOXIDE,	G/MI				224.1			
FUEL ECONOMY,	MPG				45.0			
HYDROCARBONS, (THC)	G/MI				.18			
CARBON MONOXIDE,	G/MI				.82			
OXIDES OF NITROGEN,	G/MI				.54			
PARTICULATES,	G/MI				.027			

TABLE C-48. VOLKSWAGEN WITH RETARDED TIMING AND TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	7	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG (2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	5/ 9/88	ACTUAL ROAD LOAD	5.2 KW (7.0 HP)
ENGINE 1.6 L (98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23278. KM(14464. MILES)
				CVS NO.	17		
BAROMETER	741.68	MM HG (29.20 IN HG)		DRY BULB TEMP.	28.3 DEG C (83.0 DEG F)		
RELATIVE HUMIDITY	52.	PCT		ABS. HUMIDITY	13.0 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.08
BAG RESULTS				NYCC			
TEST CYCLE							
BLOWER DIF P MM. H2O(IN. H2O)				1778.0	(70.0)		
BLOWER INLET P MM. H2O(IN. H2O)				1778.0	(70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)				48.9	(120.0)		
BLOWER REVOLUTIONS				5858.			
TOT FLOW STD. CU. METRES(SCF)				115.4	< 4073.)		
THC SAMPLE METER/RANGE/PPM				30.2/1022/	30.		
THC BCKGRD METER/RANGE/PPM				9.4/1022/	9.		
CO SAMPLE METER/RANGE/PPM				32.5/	12/ 33.		
CO BCKGRD METER/RANGE/PPM				.6/	12/ 1.		
CO2 SAMPLE METER/RANGE/PCT				52.9/	14/ .3051		
CO2 BCKGRD METER/RANGE/PCT				12.7/	14/ .0444		
NOX SAMPLE METER/RANGE/PPM				22.9/	1/ 5.8		
NOX BCKGRD METER/RANGE/PPM				.5/	1/ .1		
DILUTION FACTOR				43.43			
THC CONCENTRATION PPM				21.			
CO CONCENTRATION PPM				31.			
CO2 CONCENTRATION PCT				.2617			
NOX CONCENTRATION PPM				5.7			
FILTER WT. MG (EFFICIENCY, %)				.127	(57.)		
THC MASS GRAMS				1.40			
CO MASS GRAMS				4.20			
CO2 MASS GRAMS				552.6			
NOX MASS GRAMS				1.36			
PARTICULATE MASS GRAMS				.10			
RUN TIME		SECONDS		599.			
DFC, WET (DRY)				.977	(.960)		
SCF, WET (DRY)				1.000	(.980)		
VOL (SCM)				115.4			
SAM BLR (SCM)				.00			
MI (MEASURED)				1.17			
TEST NUMBER,							
BAROMETER,	MM HG			741.7			
HUMIDITY,	G/KG			13.0			
TEMPERATURE,	DEG C			28.3			
CARBON DIOXIDE,	G/MI			470.9			
FUEL ECONOMY,	MPG			21.2			
HYDROCARBONS, (THC)	G/MI			1.19			
CARBON MONOXIDE,	G/MI			3.58			
OXIDES OF NITROGEN,	G/MI			1.16			
PARTICULATES,	G/MI			.081			

TABLE C-49. VOLKSWAGEN WITH RETARDED TIMING AND WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	8	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0 VM JETTA			DATE	5/10/88	ACTUAL ROAD LOAD	5.2 KM(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1 / CVS NO.	17	DIESEL EM-619-F
TRANSMISSION A3				DYNO NO.	2		ODOMETER 23368. KM(14520. MILES)
BAROMETER 743.20 MM HG(29.26 IN HG)				DRY BULB TEMP. 25.6 DEG C(78.0 DEG F)			
RELATIVE HUMIDITY 46. PCT				ABS. HUMIDITY 9.7 GM/KG		NOX HUMIDITY CORRECTION FACTOR	.97
BAG RESULTS							
BAG NUMBER				1	2	3	4
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)				43.3 (110.0)	43.9 (111.0)	43.3 (110.0)	43.9 (111.0)
BLOWER REVOLUTIONS				4959.	8511.	4959.	8501.
TOT FLOW STD. CU. METRES(SCF)				99.6 (3519.)	170.7 (6029.)	99.6 (3518.)	170.5 (6021.)
THC SAMPLE METER/RANGE/PPM				53.6/1022/ 54.	33.8/1022/ 34.	34.5/1022/ 34.	35.6/1022/ 36.
THC BCKGRD METER/RANGE/PPM				7.3/1022/ 7.	7.3/1022/ 7.	9.2/1022/ 9.	9.2/1022/ 9.
CO SAMPLE METER/RANGE/PPM				64.2/ 13/ 62.	38.2/ 13/ 35.	46.4/ 13/ 43.	39.6/ 13/ 37.
CO BCKGRD METER/RANGE/PPM				1.2/ 13/ 1.	1.3/ 13/ 1.	.9/ 13/ 1.	.6/ 13/ 1.
CO2 SAMPLE METER/RANGE/PCT				75.0/ 11/ .6726	52.3/ 11/ .4082	67.7/ 11/ .5802	52.3/ 11/ .4082
CO2 BCKGRD METER/RANGE/PCT				7.7/ 11/ .0458	7.5/ 11/ .0446	7.9/ 11/ .0471	7.6/ 11/ .0452
NOX SAMPLE METER/RANGE/PPM				55.5/ 1/ 13.9	36.1/ 1/ 9.1	50.1/ 1/ 12.6	36.2/ 1/ 9.1
NOX BCKGRD METER/RANGE/PPM				1.1/ 1/ .3	1.4/ 1/ .4	1.3/ 1/ .3	1.4/ 1/ .4
DILUTION FACTOR				19.76	32.57	22.99	32.55
THC CONCENTRATION PPM				47.	27.	26.	27.
CO CONCENTRATION PPM				59.	33.	41.	35.
CO2 CONCENTRATION PCT				.6291	.3650	.5352	.3644
NOX CONCENTRATION PPM				13.7	8.7	12.3	8.8
FILTER WT. MG (EFFICIENCY, %)				2.665 (92.)	1.822 (91.)	1.591 (91.)	1.881 (90.)
THC MASS GRAMS				2.68	2.63	1.48	2.63
CO MASS GRAMS				6.83	6.61	4.80	6.98
CO2 MASS GRAMS				1147.7	1140.9	976.4	1137.6
NOX MASS GRAMS				2.52	2.76	2.26	2.77
PARTICULATE MASS GRAMS				1.25	.87	.75	.90
THC GRAMS/MI				.75	.68	.41	.68
CO GRAMS/MI				1.90	1.70	1.33	1.79
CO2 GRAMS/MI				318.9	294.1	271.4	292.2
NOX GRAMS/MI				.70	.71	.63	.71
FUEL ECONOMY IN MPG				31.35	32.68	34.01	37.00
RUN TIME	SECONDS			506.	868.	506.	868.
MEASURED DISTANCE	MI			3.60	7.48	3.88	3.60
SCF, DRY				.979	.980	.981	.981
DFC, WET (DRY)					.962(.948)		.965(.950)
TOT VOL (SCM) / SAM BLR (SCM)				270.4/	.00	270.1/	.00
COMPOSITE RESULTS							
TEST NUMBER						3-BAG	(4-BAG)
BAROMETER	MM HG	743.2				CARBON DIOXIDE	G/MI
HUMIDITY	G/KG	9.7				FUEL ECONOMY	MPG
TEMPERATURE	DEG C	25.6				HYDROCARBONS (THC)	G/MI
						CARBON MONOXIDE	G/MI
						OXIDES OF NITROGEN	G/MI
						PARTICULATES	G/MI

TABLE C-50. VOLKSWAGEN WITH RETARDED TIMING AND WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	8	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	5/10/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23392. KM(14535. MILES)
				CVS NO.	17		
BAROMETER	743.71	MM HG	(29.28 IN HG)	DRY BULB TEMP.	24.4 DEG C(76.0 DEG F)		
RELATIVE HUMIDITY	52.	PCT		ABS. HUMIDITY	10.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.98
BAG RESULTS							
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				43.9 (111.0)			
BLOWER REVOLUTIONS				7498.			
TOT FLOW STD. CU. METRES(SCF)				150.5 (5315.)			
THC SAMPLE METER/RANGE/PPM				34.0/1022/ 34.			
THC BCKGRD METER/RANGE/PPM				9.4/1022/ 9.			
CO SAMPLE METER/RANGE/PPM				43.0/ 13/ 40.			
CO BCKGRD METER/RANGE/PPM				.3/ 13/ 0.			
CO2 SAMPLE METER/RANGE/PCT				88.0/ 11/ .8580			
CO2 BCKGRD METER/RANGE/PCT				7.6/ 11/ .0452			
NOX SAMPLE METER/RANGE/PPM				76.2/ 1/ 19.1			
NOX BCKGRD METER/RANGE/PPM				.8/ 1/ .2			
DILUTION FACTOR				15.62			
THC CONCENTRATION PPM				25.			
CO CONCENTRATION PPM				38.			
CO2 CONCENTRATION PCT				.8157			
NOX CONCENTRATION PPM				18.9			
FILTER WT. MG (EFFICIENCY, %)				2.416 (93.)			
THC MASS GRAMS				2.19			
CO MASS GRAMS				6.71			
CO2 MASS GRAMS				2248.0			
NOX MASS GRAMS				5.35			
PARTICULATE MASS GRAMS				1.14			
RUN TIME		SECONDS		765.			
DFC, WET (DRY)				.936 (.920)			
SCF, WET (DRY)				1.000 (.975)			
VOL (SCM)				150.5			
SAM BLR (SCM)				.00			
MI (MEASURED)				10.25			
TEST NUMBER,				:			
BAROMETER,		MM HG		743.7			
HUMIDITY,		G/KG		10.2			
TEMPERATURE,		DEG C		24.4			
CARBON DIOXIDE,		G/MI		219.3			
FUEL ECONOMY,		MPG		46.0			
HYDROCARBONS, (THC)		G/MI		.21			
CARBON MONOXIDE,		G/MI		.65			
OXIDES OF NITROGEN,		G/MI		.52			
PARTICULATES,		G/MI		.111			

TABLE C-51. VOLKSWAGEN WITH RETARDED TIMING AND WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	8	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0 VW JETTA			DATE	5/10/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23410. KM(14546. MILES)
				CVS NO.	17		
BAROMETER	743.71 MM HG(29.28 IN HG)			DRY BULB TEMP.	23.3 DEG C(74.0 DEG F)		
RELATIVE HUMIDITY	58. PCT			ABS. HUMIDITY	10.6 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.00
BAG RESULTS							
TEST CYCLE				NYCC			
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				45.0 (113.0)			
BLOWER REVOLUTIONS				5858.			
TOT FLOW STD. CU. METRES(SCF)				117.2 (4139.)			
THC SAMPLE METER/RANGE/PPM				35.2/1022/ 35.			
THC BCKGRD METER/RANGE/PPM				8.2/1022/ 8.			
CO SAMPLE METER/RANGE/PPM				35.5/ 13/ 33.			
CO BCKGRD METER/RANGE/PPM				1.0/ 13/ 1.			
CO2 SAMPLE METER/RANGE/PCT				40.9/ 11/ .2981			
CO2 BCKGRD METER/RANGE/PCT				7.6/ 11/ .0452			
NOX SAMPLE METER/RANGE/PPM				22.1/ 1/ 5.6			
NOX BCKGRD METER/RANGE/PPM				1.6/ 1/ .4			
DILUTION FACTOR				44.35			
THC CONCENTRATION PPM				27.			
CO CONCENTRATION PPM				31.			
CO2 CONCENTRATION PCT				.2539			
NOX CONCENTRATION PPM				5.2			
FILTER WT. MG (EFFICIENCY, %)				.931 (87.)			
THC MASS GRAMS				1.84			
CO MASS GRAMS				4.22			
CO2 MASS GRAMS				544.9			
NOX MASS GRAMS				1.16			
PARTICULATE MASS GRAMS				.46			
RUN TIME	SECONDS			597.			
DFC, WET (DRY)				.977 (.959)			
SCF, WET (DRY)				1.000 (.979)			
VOL (SCM)				117.2			
SAM BLR (SCM)				.00			
MI (MEASURED)				1.17			
TEST NUMBER,							
BAROMETER,	MM HG			743.7			
HUMIDITY,	G/KG			10.6			
TEMPERATURE,	DEG C			23.3			
CARBON DIOXIDE,	G/MI			466.2			
FUEL ECONOMY,	MPG			21.3			
HYDROCARBONS, (THC)	G/MI			1.58			
CARBON MONOXIDE,	G/MI			3.61			
OXIDES OF NITROGEN,	G/MI			1.00			
PARTICULATES,	G/MI			.396			

TABLE C-52. VOLKSWAGEN WITH RETARDED TIMING AND WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO. 8	RUN 2	VEHICLE NO.	TEST WEIGHT 1191. KG(2625. LBS)
VEHICLE MODEL 0 VW JETTA		DATE 5/13/88	ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
ENGINE 1.6.L(98. CID) L-4		BAG CART NO. 2 / CVS NO. 17	DIESEL EM-619-F
TRANSMISSION A3		DYNO NO. 2	ODOMETER 23450. KM(14571. MILES)

BAROMETER 745.74 MM HG (29.36 IN HG) DRY BULB TEMP. 25.0 DEG C (77.0 DEG F)
RELATIVE HUMIDITY 52. PCT ABS. HUMIDITY 10.6 GM/KG NOX HUMIDITY CORRECTION FACTOR 1.00
POC RESULTS

BAG RESULTS

BAG NUMBER		1	2	3	4
DESCRIPTION		COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)		1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)		1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)		40.6 (105.0)	38.9 (102.0)	37.8 (100.0)	40.6 (105.0)
BLOWER REVOLUTIONS		4973.	8509.	4967.	8499.
TOT FLOW STD. CU. METRES(SCF)		101.1 (3569.)	173.6 (6131.)	101.6 (3589.)	172.7 (6098.)
THC SAMPLE METER/RANGE/PPM		48.3/1022/ 48.	32.6/1022/ 33.	35.2/1022/ 35.	35.9/1022/ 36.
THC BCKGRD METER/RANGE/PPM		6.0/1022/ 6.	6.0/1022/ 6.	8.2/1022/ 8.	8.2/1022/ 8.
CO SAMPLE METER/RANGE/PPM		55.4/ 12/ 56.	33.1/ 12/ 33.	40.6/ 12/ 41.	34.5/ 12/ 35.
CO BCKGRD METER/RANGE/PPM		.0/ 12/ 0.	.1/ 12/ 0.	.0/ 12/ 0.	.0/ 12/ 0.
CO2 SAMPLE METER/RANGE/PCT		78.9/ 14/ .6418	61.2/ 14/ .3922	74.4/ 14/ .5681	62.1/ 14/ .4026
CO2 BCKGRD METER/RANGE/PCT		12.0/ 14/ .0416	12.3/ 14/ .0428	12.8/ 14/ .0448	13.0/ 14/ .0456
NOX SAMPLE METER/RANGE/PPM		50.6/ 1/ 12.7	32.7/ 1/ 8.2	45.6/ 1/ 11.4	32.9/ 1/ 8.3
NOX BCKGRD METER/RANGE/PPM		.1/ 1/ .0	.3/ 1/ .1	.1/ 1/ .0	.4/ 1/ .1
DILUTION FACTOR		20.73	33.91	23.49	33.01
THC CONCENTRATION PPM		43.	27.	27.	28.
CO CONCENTRATION PPM		54.	32.	40.	34.
CO2 CONCENTRATION PCT		.6023	.3506	.5252	.3583
NOX CONCENTRATION PPM		12.7	8.2	11.4	8.2
FILTER WT. MG (EFFICIENCY, %)		2.365 (94.)	1.679 (90.)	1.505 (92.)	1.660 (91.)
THC MASS GRAMS		2.49	2.69	1.61	2.79
CO MASS GRAMS		6.34	6.53	4.68	6.79
CO2 MASS GRAMS		1114.6	1114.6	977.4	1133.0
NOX MASS GRAMS		2.44	2.70	2.21	2.70
PARTICULATE MASS GRAMS		1.14	.84	.74	.83
THC GRAMS/MI		.69	.69	.45	.72
CO GRAMS/MI		1.75	1.67	1.30	1.75
CO2 GRAMS/MI		307.2	285.4	271.4	291.8
NOX GRAMS/MI		.67	.69	.61	.69
FUEL ECONOMY IN MPG		32.58	33.80	35.03	34.25
RUN TIME	SECONDS	507.	868.	506.	868.
MEASURED DISTANCE	MI	3.63	7.53	3.90	3.88
SCF, DRY		.977	.979	.980	.979
DFC, WET (DRY)		.964(.947)			.965(.949)
TOT VOL (SCM) / SAM BLR (SCM)		274.7/ .00			274.3/ .00

COMPOSITE RESULTS

TEST NUMBER
BAROMETER MM HG 745.7
HUMIDITY G/KG 10.6
TEMPERATURE DEG C 25.0

CARBON DIOXIDE	G/MI	286.1	(288.0)
FUEL ECONOMY	MPG	34.99	(34.76)
HYDROCARBONS (THC)	G/MI	.62	(.63)
CARBON MONOXIDE	G/MI	1.59	(1.61)
OXIDES OF NITROGEN	G/MI	.67	(.67)
PARTICULATES	G/MI	.233	(.232)

TABLE C-53. VOLKSWAGEN WITH RETARDED TIMING AND WITHOUT TRAP, HFET

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 HFET - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	8	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	5/13/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23476. KM(14587. MILES)
				CVS NO.	17		
BAROMETER 746.00 MM HG(29.37 IN HG)				DRY BULB TEMP. 25.0 DEG C(77.0 DEG F)			
RELATIVE HUMIDITY 46. PCT				ABS. HUMIDITY 9.2 GM/KG			
BAG RESULTS				NOX HUMIDITY CORRECTION FACTOR .95			
TEST CYCLE				HFET			
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)						
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)						
BLOWER INLET TEMP. DEG. C(DEG. F)	46.1 (115.0)						
BLOWER REVOLUTIONS	7506.						
TOT FLOW STD. CU. METRES(SCF)	150.3 (5306.)						
THC SAMPLE METER/RANGE/PPM	36.8/1022/ 37.						
THC BCKGRD METER/RANGE/PPM	10.0/1022/ 10.						
CO SAMPLE METER/RANGE/PPM	38.3/ 12/ 38.						
CO BCKGRD METER/RANGE/PPM	.2/ 12/ 0.						
CO2 SAMPLE METER/RANGE/PCT	89.0/ 14/ .8441						
CO2 BCKGRD METER/RANGE/PCT	13.1/ 14/ .0460						
NOX SAMPLE METER/RANGE/PPM	77.0/ 1/ 19.3						
NOX BCKGRD METER/RANGE/PPM	.5/ 1/ .1						
DILUTION FACTOR	15.88						
THC CONCENTRATION PPM	27.						
CO CONCENTRATION PPM	37.						
CO2 CONCENTRATION PCT	.8010						
NOX CONCENTRATION PPM	19.2						
FILTER WT. MG (EFFICIENCY, %)	2.438 (94.)						
THC MASS GRAMS	2.38						
CO MASS GRAMS	6.48						
CO2 MASS GRAMS	2203.7						
NOX MASS GRAMS	5.25						
PARTICULATE MASS GRAMS	1.14						
RUN TIME	SECONDS	766.					
DFC, WET (DRY)		.937 (.923)					
SCF, WET (DRY)		1.000 (.978)					
VOL (SCM)		150.3					
SAM BLR (SCM)		.00					
MI (MEASURED)		10.25					
TEST NUMBER,							
BAROMETER,	MM HG	746.0					
HUMIDITY,	G/KG	9.2					
TEMPERATURE,	DEG C	25.0					
CARBON DIOXIDE,	G/MI	214.9					
FUEL ECONOMY,	MPG	46.9					
HYDROCARBONS, (THC)	G/MI	.23					
CARBON MONOXIDE,	G/MI	.63					
OXIDES OF NITROGEN,	G/MI	.51					
PARTICULATES,	G/MI	.111					

TABLE C-54. VOLKSWAGEN WITH RETARDED TIMING AND WITHOUT TRAP, NYCC

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 NYCC - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	8	RUN	2	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0 VW JETTA			DATE	5/13/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	2	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23492. KM(14597. MILES)
				CVS NO.	17		
BAROMETER	746.00 MM HG(29.37 IN HG)			DRY BULB TEMP.	25.0 DEG C(77.0 DEG F)		
RELATIVE HUMIDITY	46. PCT			ABS. HUMIDITY	9.2 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.95
BAG RESULTS				NYCC			
TEST CYCLE							
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)			
BLOWER INLET TEMP. DEG. C(DEG. F)				48.9 (120.0)			
BLOWER REVOLUTIONS				5855.			
TOT FLOW STD. CU. METRES(SCF)				116.2 (4103.)			
THC SAMPLE METER/RANGE/PPM				33.7/1022/ .34.			
THC BCKGRD METER/RANGE/PPM				9.6/1022/ .10.			
CO SAMPLE METER/RANGE/PPM				31.5/ .12/ .32.			
CO BCKGRD METER/RANGE/PPM				.4/ .12/ .0.			
CO2 SAMPLE METER/RANGE/PCT				52.0/ .14/ .2965			
CO2 BCKGRD METER/RANGE/PCT				13.0/ .14/ .0456			
NOX SAMPLE METER/RANGE/PPM				23.1/ .1/ .5.9			
NOX BCKGRD METER/RANGE/PPM				.5/ .1/ .1			
DILUTION FACTOR				44.62			
THC CONCENTRATION PPM				24.			
CO CONCENTRATION PPM				31.			
CO2 CONCENTRATION PCT				.2519			
NOX CONCENTRATION PPM				5.7			
FILTER WT. MG (EFFICIENCY, %)				.764 (87.)			
THC MASS GRAMS				1.63			
CO MASS GRAMS				4.14			
CO2 MASS GRAMS				535.9			
NOX MASS GRAMS				1.22			
PARTICULATE MASS GRAMS				.39			
RUN TIME	SECONDS			598.			
DFC, WET (DRY)				.978 (. .963)			
SCF, WET (DRY)				1.000 (. .983)			
VOL (SCM)				116.2			
SAM BLR (SCM)				.00			
MI (MEASURED)				1.17			
TEST NUMBER,							
BARDOMETER,	MM HG			746.0			
HUMIDITY,	G/KG			9.2			
TEMPERATURE,	DEG C			25.0			
CARBON DIOXIDE,	G/MI			458.7			
FUEL ECONOMY,	MPG			21.7			
HYDROCARBONS, (THC)	G/MI			1.40			
CARBON MONOXIDE,	G/MI			3.54			
OXIDES OF NITROGEN,	G/MI			1.04			
PARTICULATES,	G/MI			.333			

TABLE C-55. VOLKSWAGEN WITH RETARDED TIMING, TRAP, AND LOW AROMATIC FUEL, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO. 9 RUN 1
 VEHICLE MODEL 0 VW JETTA
 ENGINE 1.6 L(98. CID) L-4
 TRANSMISSION A3

VEHICLE NO.
 DATE 5/17/88
 BAG CART NO. 1 / CVS NO. 17
 DYN NO. 2

TEST WEIGHT 1191. KG(2625. LBS)
 ACTUAL ROAD LOAD 5.2 KW(7.0 HP)
 DIESEL EM-752-F
 ODOMETER 23702. KM(14728. MILES)

BAROMETER 741.17 MM HG(29.18 IN HG)
 RELATIVE HUMIDITY 51. PCT
 BAG RESULTS

DRY BULB TEMP. 23.3 DEG C(74.0 DEG F)
 ABS. HUMIDITY 9.3 GM/KG NOX HUMIDITY CORRECTION FACTOR .96

BAG NUMBER DESCRIPTION	1 COLD TRANSIENT	2 STABILIZED	3 HOT TRANSIENT	4 STABILIZED
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)
BLOWER INLET TEMP. DEG. C(DEG. F)	42.8 (109.0)	42.2 (108.0)	42.8 (109.0)	42.2 (108.0)
BLOWER REVOLUTIONS	4953.	8473.	4957.	8519.
TOT FLOW STD. CU. METRES(SCF)	99.3 (3507.)	170.2 (6010.)	99.4 (3511.)	171.1 (6041.)
THC SAMPLE METER/RANGE/PPM	34.3/1022/ 34.	26.0/1022/ 26.	28.6/1022/ 29.	25.3/1022/ 25.
THC BCKGRD METER/RANGE/PPM	9.6/1022/ 10.	9.6/1022/ 10.	11.8/1022/ 12.	11.8/1022/ 12.
CO SAMPLE METER/RANGE/PPM	42.3/ 13/ 39.	27.3/ 13/ 25.	35.4/ 13/ 32.	27.5/ 13/ 25.
CO BCKGRD METER/RANGE/PPM	.7/ 13/ 1.	.5/ 13/ 0.	1.1/ 13/ 1.	.8/ 13/ 1.
CO2 SAMPLE METER/RANGE/PCT	75.4/ 11/ .6779	52.4/ 11/ .4093	66.6/ 11/ .5670	52.8/ 11/ .4134
CO2 BCKGRD METER/RANGE/PCT	8.3/ 11/ .0496	8.4/ 11/ .0502	8.7/ 11/ .0521	8.7/ 11/ .0521
NOX SAMPLE METER/RANGE/PPM	52.9/ 1/ 13.3	32.9/ 1/ 8.3	42.3/ 1/ 10.6	34.4/ 1/ 8.7
NOX BCKGRD METER/RANGE/PPM	1.6/ 1/ .4	.6/ 1/ .2	.5/ 1/ .1	.7/ 1/ .2
DILUTION FACTOR	19.17	31.70	22.92	31.39
THC CONCENTRATION PPM	25.	17.	17.	14.
CO CONCENTRATION PPM	37.	24.	31.	24.
CO2 CONCENTRATION PCT	.6309	.3606	.5171	.3629
NOX CONCENTRATION PPM	12.9	8.2	10.5	8.5
FILTER WT. MG (EFFICIENCY, %)	.370 (69.)	.224 (61.)	.206 (59.)	.208 (59.)
THC MASS GRAMS	1.46	1.66	1.00	1.38
CO MASS GRAMS	4.33	4.70	3.55	4.71
CO2 MASS GRAMS	1147.3	1123.7	941.5	1136.7
NOX MASS GRAMS	2.34	2.54	1.91	2.66
PARTICULATE MASS GRAMS	.22	.16	.15	.15
THC GRAMS/MI	.40	.42	.28	.36
CO GRAMS/MI	1.20	1.20	.99	1.21
CO2 GRAMS/MI	318.0	286.2	262.8	293.1
NOX GRAMS/MI	.65	.65	.53	.69
FUEL ECONOMY IN MPG	30.26	31.90	33.58	32.82
RUN TIME SECONDS	506.	863.	505.	869.
MEASURED DISTANCE MI	3.61	7.53	3.93	3.88
SCF, DRY	.977	.979	.980	.980
DFC, NET (DRY)	.961(.945)			.964(.948)
TOT VOL (SCM) / SAM BLR (SCM)	269.5/ .00			270.5/ .00

COMPOSITE RESULTS

TEST NUMBER

BAROMETER MM HG 741.2

HUMIDITY G/KG 9.3

TEMPERATURE DEG C 23.3

CARBON DIOXIDE	G/MI	286.4	(288.4)
FUEL ECONOMY	MPG	33.58	(33.36)
HYDROCARBONS (THC)	G/MI	.38	(.36)
CARBON MONOXIDE	G/MI	1.14	(1.15)
OXIDES OF NITROGEN	G/MI	.62	(.63)
PARTICULATES	G/MI	.045	(.045)

TABLE C-56. VOLKSWAGEN WITH RETARDED TIMING, WITHOUT TRAP, AND WITH LOW AROMATIC FUEL, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
FTP - VEHICLE EMISSIONS RESULTS -
PROJECT 08-1280-001

TEST NO.	10	RUN	1	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0 VW JETTA	DATE	5/16/88			ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4		BAG CART NO.	1 / CVS NO.	17	DIESEL	EM-752-F	
TRANSMISSION A3		DYNO NO.	2			ODOMETER	23591. KM(14659. MILES)
BAROMETER	741.17 MM HG(29.18 IN HG)	DRY BULB TEMP.	24.4 DEG C(76.0 DEG F)				
RELATIVE HUMIDITY	63. PCT	ABS. HUMIDITY	12.4 GM/KG			NOX HUMIDITY CORRECTION FACTOR	1.06
BAG RESULTS							
BAG NUMBER		1	2	3	4		
DESCRIPTION		COLD TRANSIENT	STABILIZED	HOT TRANSIENT	STABILIZED		
BLOWER DIF P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET P MM. H2O(IN. H2O)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)		
BLOWER INLET TEMP. DEG. C(DEG. F)	42.2 (108.0)	42.8 (109.0)	42.8 (109.0)	41.7 (107.0)			
BLOWER REVOLUTIONS	4969.	8513.	4957.		8503.		
TOT FLOW STD. CU. METRES(SCF)	99.8 (3524.)	170.8 (6030.)	99.4 (3511.)	170.9 (6036.)			
THC SAMPLE METER/RANGE/PPM	30.8/1022/ 31.	23.2/1022/ 23.	24.6/1022/ 25.	24.7/1022/ 25.			
THC BCKGRD METER/RANGE/PPM	6.3/1022/ 6.	6.3/1022/ 6.	7.8/1022/ 8.	7.8/1022/ 8.			
CO SAMPLE METER/RANGE/PPM	39.4/ 13/ 36.	27.0/ 13/ 24.	31.7/ 13/ 29.	27.6/ 13/ 25.			
CO BCKGRD METER/RANGE/PPM	1.9/ 13/ 2.	.7/ 13/ 1.	.0/ 13/ 0.	.1/ 13/ 0.			
CO2 SAMPLE METER/RANGE/PCT	82.8/ 11/ .7803	50.7/ 11/ .3919	67.1/ 11/ .5730	52.2/ 11/ .4072			
CO2 BCKGRD METER/RANGE/PCT	8.3/ 11/ .0496	7.9/ 11/ .0471	7.2/ 11/ .0427	7.3/ 11/ .0433			
NOX SAMPLE METER/RANGE/PPM	49.2/ 1/ 12.4	29.5/ 1/ 7.5	45.1/ 1/ 11.3	33.9/ 1/ 8.6			
NOX BCKGRD METER/RANGE/PPM	.4/ 1/ .1	.2/ 1/ .1	.9/ 1/ .2	.9/ 1/ .2			
DILUTION FACTOR	16.69	33.11	22.71	31.87			
THC CONCENTRATION PPM	25.	17.	17.	17.			
CO CONCENTRATION PPM	33.	23.	28.	24.			
CO2 CONCENTRATION PCT	.7337	.3463	.5321	.3652			
NOX CONCENTRATION PPM	12.3	7.4	11.1	8.3			
FILTER WT. MG (EFFICIENCY, %)	1.725 (91.)	1.173 (86.)	1.021 (88.)	1.121 (86.)			
THC MASS GRAMS	1.45	1.70	.99	1.71			
CO MASS GRAMS	3.89	4.61	3.24	4.82			
CO2 MASS GRAMS	1340.7	1082.7	968.6	1143.0			
NOX MASS GRAMS	2.48	2.56	2.24	2.88			
PARTICULATE MASS GRAMS	.82	.59	.50	.56			
THC GRAMS/MI	.40	.43	.27	.44			
CO GRAMS/MI	1.08	1.18	.89	1.23			
CO2 GRAMS/MI	370.8	276.5	267.5	292.3			
NOX GRAMS/MI	.69	.65	.62	.74			
FUEL ECONOMY IN MPG	26.01	29.92	34.75	36.03	34.33	32.88	
RUN TIME	506.	867.	506.	868.			
MEASURED DISTANCE	MI	3.62	7.53	3.92	7.53	3.91	
SCF, DRY	.972	.974	.976	.974	.975	.976	
DFC, WET (DRY)		.959(.939)			.964(.944)		
TOT VOL (SCM) / SAM BLR (SCM)		270.6/ .00			270.4/ .00		

COMPOSITE RESULTS

TEST NUMBER			3-BAG	(4-BAG)
BAROMETER	MM HG	741.2	CARBON DIOXIDE	6/MI
HUMIDITY	G/KG	12.4	FUEL ECONOMY	MPG
TEMPERATURE	DEG C	24.4	HYDROCARBONS (THC)	6/MI
			CARBON MONOXIDE	6/MI
			OXIDES OF NITROGEN	6/MI
			PARTICULATES	6/MI

TABLE C-57. VOLKSWAGEN BASELINE WITH TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	1	RUN	7	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	5/18/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	2380. KM(1479. MILES)
				CVS NO.	17		
BAROMETER	739.65	MM HG(29.12 IN HG)		DRY BULB TEMP.	23.3 DEG C(74.0 DEG F)		
RELATIVE HUMIDITY	54.	PCT		ABS. HUMIDITY	10.0 GM/KG	NOX HUMIDITY CORRECTION FACTOR	.98
BAG RESULTS							
BAG NUMBER				1	2	3	
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	
BLOWER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	
BLOWER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	
BLOWER INLET TEMP. DEG. C(DEG. F)				42.8 (109.0)	42.8 (109.0)	42.8 (109.0)	
BLOWER REVOLUTIONS				4952.	8529.	4944.	
TOT FLOW STD. CU. METRES(SCF)				99.0 (3497.)	170.7 (6026.)	98.9 (3491.)	
THC SAMPLE METER/RANGE/PPM				19.4/1022/ 19.	14.9/1022/ 15.	15.9/1022/ 16.	
THC BCKGRD METER/RANGE/PPM				6.4/1022/ 6.	6.4/1022/ 6.	5.5/1022/ 6.	
CO SAMPLE METER/RANGE/PPM				38.0/ 13/ 35.	26.2/ 13/ 24.	33.0/ 13/ 30.	
CO BCKGRD METER/RANGE/PPM				1.7/ 13/ 1.	1.2/ 13/ 1.	1.2/ 13/ 1.	
CO2 SAMPLE METER/RANGE/PCT				73.5/ 11/ .6530	51.6/ 11/ .4011	68.2/ 11/ .5863	
CO2 BCKGRD METER/RANGE/PCT				8.1/ 11/ .0483	7.9/ 11/ .0471	8.1/ 11/ .0483	
NOX SAMPLE METER/RANGE/PPM				61.5/ 1/ 15.4	40.2/ 1/ 10.1	56.0/ 1/ 14.1	
NOX BCKGRD METER/RANGE/PPM				.4/ 1/ .1	.3/ 1/ .1	.2/ 1/ .1	
DILUTION FACTOR				20.53	33.39	22.88	
THC CONCENTRATION PPM				13.	9.	11.	
CO CONCENTRATION PPM				33.	22.	28.	
CO2 CONCENTRATION PCT				.6070	.3554	.5401	
NOX CONCENTRATION PPM				15.3	10.0	14.0	
FILTER WT. MG (EFFICIENCY, %)				.255 (55.)	.209 (57.)	.226 (59.)	
THC MASS GRAMS				.76	.86	.61	
CO MASS GRAMS				3.75	4.39	3.26	
CO2 MASS GRAMS				1100.7	1110.4	977.5	
NOX MASS GRAMS				2.84	3.20	2.59	
PARTICULATE MASS GRAMS				.19	.16	.16	
THC GRAMS/MI				.21	.22	.17	
CO GRAMS/MI				1.04	1.13	.91	
CO2 GRAMS/MI				306.4	285.8	271.8	
NOX GRAMS/MI				.79	.82	.72	
FUEL ECONOMY IN MPG				32.93	35.27	37.14	
RUN TIME		SECONDS		505.	868.	505.	
MEASURED DISTANCE		MI		3.59	3.89	3.60	
SCF, DRY				.977	.979	.977	
COMPOSITE RESULTS						3-BAG	(4-BAG)
TEST NUMBER				CARBON DIOXIDE	6/MI	286.2	(.0)
BAROMETER	MM HG	739.6		FUEL ECONOMY	MPG	35.24	(.00)
HUMIDITY	G/KG	10.0		HYDROCARBONS (THC)	6/MI	.20	(.00)
TEMPERATURE	DEG C	23.3		CARBON MONOXIDE	6/MI	1.05	(.00)
				OXIDES OF NITROGEN	6/MI	.79	(.00)
				PARTICULATES	6/MI	.045	(.000)

TABLE C-58. VOLKSWAGEN BASELINE WITHOUT TRAP, FTP

SOUTHWEST RESEARCH INSTITUTE - DEPARTMENT OF EMISSIONS RESEARCH
 FTP - VEHICLE EMISSIONS RESULTS -
 PROJECT 08-1280-001

TEST NO.	2	RUN	6	VEHICLE NO.		TEST WEIGHT	1191. KG(2625. LBS)
VEHICLE MODEL	0	VW JETTA		DATE	5/19/88	ACTUAL ROAD LOAD	5.2 KW(7.0 HP)
ENGINE 1.6 L(98. CID) L-4				BAG CART NO.	1	DIESEL	EM-619-F
TRANSMISSION A3				DYNO NO.	2	ODOMETER	23920. KM(14863. MILES)
				CVS NO.	17		
BAROMETER	737.62	MM HG(29.04 IN HG)		DRY BULB TEMP.	23.3 DEG C(74.0 DEG F)		
RELATIVE HUMIDITY	58.	PCT		ABS. HUMIDITY	10.8 GM/KG	NOX HUMIDITY CORRECTION FACTOR	1.00
BAG RESULTS							
BAG NUMBER				1	2	3	
DESCRIPTION				COLD TRANSIENT	STABILIZED	HOT TRANSIENT	
BLOMER DIF P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	
BLOMER INLET P MM. H2O(IN. H2O)				1778.0 (70.0)	1778.0 (70.0)	1778.0 (70.0)	
BLOMER INLET TEMP. DEG. C(DEG. F)				37.8 (100.0)	40.6 (105.0)	42.8 (109.0)	
BLOMER REVOLUTIONS				4951.	8504.	4942.	
TOT FLOW STD. CU. METRES(SCF)				99.8 (3525.)	170.3 (6013.)	98.5 (3477.)	
THC SAMPLE METER/RANGE/PPM				25.4/1022/ 25.	17.9/1022/ 18.	18.2/1022/ 18.	
THC BCKGRD METER/RANGE/PPM				5.6/1022/ 6.	5.6/1022/ 6.	5.2/1022/ 5.	
CO SAMPLE METER/RANGE/PPM				37.0/ 13/ 34.	27.2/ 13/ 25.	30.3/ 13/ 28.	
CO BCKGRD METER/RANGE/PPM				.5/ 13/ 0.	.5/ 13/ 0.	.4/ 13/ 0.	
CO2 SAMPLE METER/RANGE/PCT				74.7/ 11/ .6687	52.0/ 11/ .4052	65.5/ 11/ .5539	
CO2 BCKGRD METER/RANGE/PCT				7.6/ 11/ .0452	7.6/ 11/ .0452	6.4/ 11/ .0378	
NOX SAMPLE METER/RANGE/PPM				62.8/ 1/ 15.8	40.3/ 1/ 10.1	55.5/ 1/ 13.9	
NOX BCKGRD METER/RANGE/PPM				.9/ 1/ .2	.8/ 1/ .2	.7/ 1/ .2	
DILUTION FACTOR				20.04	33.02	24.21	
THC CONCENTRATION PPM				20.	12.	13.	
CO CONCENTRATION PPM				33.	24.	26.	
CO2 CONCENTRATION PCT				.6257	.3613	.5176	
NOX CONCENTRATION PPM				15.5	9.9	13.8	
FILTER WT. MG (EFFICIENCY, %)				1.892 (93.)	1.544 (91.)	1.420 (92.)	
THC MASS GRAMS				1.16	1.23	.75	
CO MASS GRAMS				3.78	4.67	3.03	
CO2 MASS GRAMS				1143.5	1126.5	933.3	
NOX MASS GRAMS				2.97	3.24	2.59	
PARTICULATE MASS GRAMS				.89	.74	.66	
THC GRAMS/MI				.32	.32	.21	
CO GRAMS/MI				1.04	1.21	.84	
CO2 GRAMS/MI				315.3	292.7	259.9	
NOX GRAMS/MI				.82	.84	.72	
FUEL ECONOMY IN MPG				31.97	34.39	38.81	
RUN TIME		SECONDS		506.	868.	504.	
MEASURED DISTANCE		MILE		3.63	3.85	3.59	
SCF, DRY				.975	.978	.976	
COMPOSITE RESULTS						3-BAG	(4-BAG)
TEST NUMBER				CARBON DIOXIDE	G/MI	288.4	(.0)
BAROMETER	MM HG	737.6		FUEL ECONOMY	MPG	34.93	(.00)
HUMIDITY	G/KG	10.8		HYDROCARBONS (THC)	G/MI	.29	(.00)
TEMPERATURE	DEG C	23.3		CARBON MONOXIDE	G/MI	1.08	(.00)
				OXIDES OF NITROGEN	G/MI	.80	(.00)
				PARTICULATES	G/MI	.201	(.000)